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1934

The **Commercial Bulletin**

*A Monthly Review of Official and other
announcements relating particularly
to British Export Trade*

Issued by

**HIS MAJESTY'S SENIOR TRADE COMMISSIONER
IN INDIA AND CEYLON.**

**FAIRLIE HOUSE,
FAIRLIE PLACE,
CALCUTTA**

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H. M. TRADE COMMISSIONER SERVICE.

Mr. R. B. Willmot returned from leave out of India on 21st January and resumed charge as His Majesty's Trade Commissioner at Calcutta.

GENERAL.

Further evidence of the continued all-round expansion of trade in the United Kingdom is provided in the trade returns for November. November was the fifth successive month in which exports have increased—a record unequalled for some years past. The principal increases, compared with November, 1932, were in non-ferrous metals and manufactures, cotton yarns and manufactures, woollens and worsteds, vehicles, iron and steel manufactures, chemicals, drugs, machinery, oils, fats and resins, electrical goods, cutlery and hardware, and coal.

The total exports of manufactured articles increased by £3,240,000 and of raw materials by £230,000.

The increased coal exports went mainly to Scandinavian countries, Germany, Belgium, Greece, Argentina and the United States of America. During November the United States imported tin from the United Kingdom to the value of £220,000 as compared with £41,000 in the corresponding month of 1932.

Exports of motor cars to India, Malaya, New Zealand and the Irish Free State increased considerably.

The imports in November reached the highest figure since February of the preceding year, the most encouraging feature being the continued advance in raw materials—an infallible sign of trade buoyancy. The total imports of raw materials amounted to £16,982,000 or £3,332,000 more than in November, 1932. Increases in individual items included:—wood and timber, raw wool, raw cotton, hides and skins, oil seeds, fats, resins, non-ferrous ores, iron ores and scrap.

For the 11 months ended November, 1933, exports of raw materials increased by £2,619,000, and exports of manufactured articles by £5,891,000. The largest increase in exported raw material was raw wool, which

rose in value by £1,767,000. Eleven categories of manufactured goods, principally non-ferrous metals, woollen and worsted yarns, iron and steel, vehicles, leather and manufactures, cutlery and electrical goods showed increases during the 11 months. Exports of food, drink, and tobacco fell by £3,423,000.

The figures for the two 11 month periods are as follows:—

	1933. £	1932. £
Imports . . .	613,017,718	642,158,291
Exports . . .	337,012,335	332,641,312
Re-Exports . . .	45,083,980	46,780,592
Adverse balance . . .	230,921,401	263,036,387

The number of insured workers in employment on November 20th is estimated at 9,956,000. The increase of 31,000 during the month, although not as high as the average monthly rate of increase during the past 12 months, is significant, especially as there is generally a downward trend at this season, and compares with a fall of 24,000 in the same period last year. The improvement in employment is most noticeable in the following industries:—

Coal mining, iron and steel, general and electrical engineering, metal goods manufacture, and wool and cotton.

STEEL FURNITURE AND OFFICE EQUIPMENT

Bar-Lock (1925) Co., Barlock Road, Basford, Nottingham, manufacturers of the well known typewriter, have begun the manufacture of steel furniture and office equipment, including shelving, filing units, tables, etc. It is the intention of the firm to show specimens of this new branch of their productive activity at the forthcoming British Industries Fair.

CHOCOLATE AND CONFECTIONERY EXHIBITION, 1934.

An Exhibition covering the whole field of Chocolate and Confectionery will be held in London at Olympia from 29th August to 6th September, 1934. This, the Seventh Annual Exhibition, is being organized by the Manufacturing Confectioners' Alliance, an incorporated body and the national organization of confectionery manufacturers in the United Kingdom.

This chocolate and sugar confectionery exhibition is the largest of its kind in the world; exhibits will also include machinery, appliances, materials, packings, etc.

A regular feature of the exhibition is the stand of the British Association of Research for the Cocoa, Chocolate and Sugar Confectionery Trades. This Association deals with the scientific problems of the industry, and will be showing an extensive display of scientific apparatus used in the control of manufacturing processes.

Lectures and demonstrations on window display will be given during the course of the exhibition, and competitions held. The exhibition is the recognized occasion for the holding of conferences by the wholesale and retail as well as the manufacturing organizations of the industry.

Previous exhibitions have invariably been very well attended by buyers from abroad interested in confectionery, and with the present signs of trade revival it is hoped that the forthcoming exhibition will attract in 1934 even more visitors from overseas than in the past.

Full details are obtainable from the Secretary, Manufacturing Confectioners' Alliance, Incorporated, 22, Buckingham Gate, London, S.W. 1.

CYCLE AND MOTOR CYCLE EXHIBITION, 1934.

A Bicycle and Motor Cycle Show has been arranged to take place in the National Hall, Olympia, London, W., and will open about 5th November, 1934.

CONTRACTS SECURED.

Order from Argentina.

Wiggins, Teape & Alex. Pirie Ltd. have secured a contract for 1,300 reams of paper for the Argentine Mint valued at £2,000.

Order from Canada.

Richard Thomas and Co., Ltd., of Swansea, are reported to have received an order from Canada for a million boxes of tinplates. It is estimated that the contract will provide employment in the tinplate industry and associated steel-works and collieries for ten thousand men for ten weeks.

Engineering Order for Newcastle.

C. A. Parsons, Limited, of Heaton, Newcastle-on-Tyne, have received an order for a 20,000 kilowatt turbo-alternator for the East Rand Proprietary Mines, Limited, South Africa.

The Norwegian State Railways has placed an order for 40,000 tons of Durham locomotive coal.

Finnish Order for Durham Coal.

Another coal order, the third from Finland placed recently on Tyneside, was reported at Newcastle recently. The contract involves the supply of 20,000 tons of Durham washed nuts for the Helsingfors gas works.

Coal for Sweden.

The Swedish State Railways have contracted for a supply of 18,000 tons of Broomhill (Northumberland) locomotive coal and 2,000 tons from the Whitehaven Collieries. In addition the Bergslagen Railway of Sweden have bought 25,000 tons of prime Durham steam coals. To cope with the coal trade at Blyth Harbour, a loading berth which has not been used for years is to be brought into commission.

Persian State Railways Order.

An order has been placed with the Metropolitan-Cammell Carriage, Wagon and Finance Company, Limited, Saltley, Birmingham, for 60 four-wheeled covered goods wagons for the Persian State Railways.

United Kingdom Aeroplanes for Europe.

Denmark, Portugal and Spain have placed repeat orders for de Havilland "Tiger Moth" light biplanes to be used for the training of Service pilots. Spain has ordered four, Denmark seven, and Portugal ten of these machines. Denmark has in addition ordered two twin-engined "Dragon" biplanes specially modified for military purposes.

New Zealand Orders for the United Kingdom

Important contracts have recently been placed with United Kingdom firms by New Zealand corporations. They include:—

- (1) Contracts for the supply of horticultural implements and corrugated cardboard for packing fruits. The value of these orders which have been transferred by the New Zealand Fruit Export Board from the United States to firms in St. Helens, Widnes, Birmingham and London is understood to be £10,000. (2) An order for four electric trolley-buses, valued at £7,000, placed by the Christchurch City Corporation with Messrs. Ransome, Sims and Jefferies, of Ipswich. (3) A contract for drainage pumping material valued at £2,000 placed by the Dunedin Corporation with Gwynne's Lincolnshire works—the fifth of a recent series of orders.

Automatic Electric Co., Ltd., secures Lithuanian contract.

The chairman of the Automatic Electric Company recently announced that his company, acting for itself and a group of leading United Kingdom cable manufacturers, had concluded a contract with the Minister of Communications of Lithuania. This is for the conversion of the present manual telephone system in Kaunas, the capital of Lithuania and Klaipeda, the principal port of the country, to the Strowger automatic system. The contract is for the installation of 8,000 lines in Kaunas and 3,000 lines in Klaipeda, and the modernisation of the cable network is to be completed by 1st September, 1936. All the telephone material and the cables supplied will be of English manufacture.

Empire Contracts secured by United Kingdom Firm.

The Motherwell Bridge and Engineering Company have secured several contracts that will keep their works fully occupied for the next three months. These include a combined road and rail bridge, consisting of two side spans and a centre span, for the Crown Agents in Jamaica; a road bridge over the Umhlutuzi River, Natal, for the Public Works Department of the South African Government; and a 75 feet span road bridge for the Crown Agents in Kenya.

Contract for Middlesbrough.

An order for 2,200 tons of steel, valued at £22 000, has been placed by the contractors for the new post office at Dunedin, New Zealand, with Dorman Long and Co., Middlesbrough.

Palestine Order for United Kingdom Firm.

Stewarts & Lloyds, Ltd., the well-known steel tube makers, has been awarded an important contract by the Crown Agents for the Colonies, for the steel portion of the pipe-line required for supplying water to Jerusalem. The order consists of about 31 miles of 18-in. steel pipes, which are to be used for conveying water from the springs at Ras-el-Ain.

IRON, STEEL AND NON-FERROUS METALS.

The upward trend in the iron and steel markets continues, although a certain seasonal slackness has set in in some directions. Prospects, particularly in the heavier branches of steel rolling, are distinctly brighter owing to recent substantial railway programmes, and particularly to the placing in shipyards of several orders for new ships. An increased activity in the lighter sections of the industry has been evidenced during the last few months, but the heavy plate and section rolling division has been slow to respond to the improved state of affairs. The increased activity in the ship-building yards on the Clyde and the Tyne promises a much better demand for plates and angles.

The National Federation of Iron and Steel Manufacturers reports that there were 79 blast furnaces working at the end of November, *i.e.* five more than at the beginning of the month. Production of pig iron in November amounted to 374,900 tons compared with 373,300 tons in October and 267,700 tons in November, 1932. The output of steel ingots and castings in November amounted to 695,000 tons compared with 668,300 tons in October and 473,800 tons in November, 1932.

The following table shows the average monthly production of pig iron and steel ingots and castings in 1913,

1920, 1930-1932, and the production in each month since November, 1932:—

			Pig Iron.	Steel Ingots and Castings.
			Tons.	Tons.
1913	Monthly average	.	855,000	638,600
1920	"	"	668,500	755,600
1930	"	"	516,000	610,500
1931	"	"	314,400	433,500
1932	"	"	297,800	438,100
1932	—November	.	267,700	473,300
	December	.	281,500	430,400
1933	January	.	286,600	114,100
	February	.	270,800	482,700
	March	.	332,200	577,700
	April	.	324,700	509,600
	May	.	339,900	599,600
	June	.	315,600	568,800
	July	.	343,900	567,500
	August	.	362,700	551,300
	September	.	359,700	669,000
	October	.	373,300	668,300
	November	.	374,900	695,000

Imports.

The importation of iron and steel and manufactures thereof is given in the official trade returns for the month of November as 91,927 tons against 88,854 for October and 57,892 for November, 1932. The figures for the importation of iron ore and scrap are interesting, as they indicate the improvement which has taken place in the iron and steel industry during the past 12 months. For the 11 months ended November, 1932, 1,748,147 tons of iron ore and scrap were imported, whereas for 1933 the corresponding figure is 2,550,525 tons.

Exports.

The export figures as shown in the official trade returns for November can be considered satisfactory. The total is 184,391 tons of iron and steel and manufactures thereof, which compares with 193,613 tons in the immediately preceding month. The comparable figure for November, 1932, is 170,261 tons. Most of the items show increases over October, although the total is, as indicated, about 9,200 tons less. The reason for this is that the exports of galvanised sheets at 23,461 tons are

about the average for recent months, whereas the October figures (41,151 tons) included about 20,000 tons of sheets shipped to the Argentine for the erection of a locust barrier.

The tinplate figures for November (40,135 tons) are good, but the volume of enquiry for the industry is not very satisfactory at the moment. The fluctuations in exchanges have had an unsettled effect and foreign competition is very keen.

Other items in the non and steel industries, the exports of which according to the latest return have improved, include pig iron—an increase of 6,000 tons; steel bars—an increase of 3,000 tons; and cast pipes. The improvement in the light hardware industries is maintained and is particularly noticeable in the light castings industry in the Falkirk district of Scotland, which would appear to be returning to brisk trading conditions. It is understood that there are 2,000 fewer foundry workers in that district on the unemployment list and one large foundry which has been closed for two years has been re-opened. In the hollow-ware industry the extent of the improvement is shown by the fact that for the 11 months ended November, 12,132 tons were exported against 8,654 tons for the corresponding period in 1932.

The figures for non-ferrous metals are generally speaking up on those for October, although the recent high rate of export of tin to the United States has been arrested. The total value of non-ferrous metals exported to the end of November is £11,306,731 against £6,131,319 in 1932.

THE AUTOMOBILE AND ALLIED TRADES.

Wonderful progress of the United Kingdom Motor industry.

Following upon what has probably been the most successful motor exhibition ever held at Olympia, it is appropriate to review the position in which the United Kingdom motor industry stands to-day. It became at once apparent as soon as the industry was free to commence operations after the war, that before any sustained effort could be made in the export field, an assured

home market was essential, and attention was directed to this initial aspect. A sustained propaganda effort was launched and carried out so successfully that the importation of motor vehicles into the United Kingdom has fallen considerably. In 1923 the total net imports of vehicles and chassis were 27,105 units to a value of £1,098,100. In 1930 this had dropped to 11,278—value £1,827,390; in 1932 to 3,072—value £578,331, while for the nine months to the end of September, 1933, the total was 2,951 units to a value of £541,629.

The home market has now become virtually assured to the United Kingdom manufacturer. The number of vehicles in use in the United Kingdom has risen from 680,156 in 1923 to 1,612,575 in 1932. For the first six months of 1933 registrations of new cars in the United Kingdom exceeded 100,000, the first occasion that this has occurred in the history of the industry.

The figures of production of United Kingdom motor vehicles make still more interesting reading. In 1907 only 12,000 vehicles were produced in the United Kingdom. In 1923 the total was 95,000; in 1930 it had risen to 236,528 and in 1932 it had dropped slightly back, the total being 232,719. It is anticipated that 1933 private car production will show a substantial increase over 1932.

The progress made in the export field can best be appreciated by a study of the summary of United Kingdom exports over a period of years. In 1923 the total number of vehicles and chassis exported was 6,254 units of a value of £2,843,721. By 1931 this total had increased to 21,312—value £1,457,853 and in 1932 reached 10,178—value £5,116,186. During the nine months to the end of September, 1933, 36,110 units—value £1,679,956 were exported, as compared with 25,298—value £3,579,400 for the same period of 1932.

The range of new cars recently introduced by United Kingdom manufacturers shows how thoroughly the needs of export markets have been catered for. With alternative engine power available in a number of cases and chassis designed primarily for overseas use, no longer can the objection of underpower be raised against the United Kingdom car. To meet the requirements of overseas markets, optional steering control is provided in the latest products of many manufacturers, whilst synchro-mesh and pre-selective gear changing are tend-

ing to revolutionize the transmission system, and to make for the ease and satisfaction of the driver, who can almost forget that his car has a gear box.

Improved chassis design, coachwork refinements, and the introduction as standard of many additional popular fittings, have gone far towards producing from the factories in the United Kingdom, cars that for performance, value, running costs, second-hand value and general trustworthiness cannot be beaten. This is equally the case with the commercial and passenger-carrying vehicle.

The United Kingdom motor industry saw the close of 1932 with justifiable feelings of satisfaction at progress made, and with an optimistic outlook as to future possibilities. That progress has been maintained and accelerated during 1933, and as world conditions improve there can be no doubt that the industry, which this season has exported 15.6 per cent. of its total private car production, will secure an increased share of the world's markets.

London bus engine secures a record.

In an entirely new Diesel-engined racing car, Capt. G. E. T. Eyston at Brooklands, in a downpour of rain and on a water-covered track, made the first British attempt upon the world's records, in which America has hitherto enjoyed supremacy. He attacked the Diesel car record of 100.75 m.p.h. set up at Daytona in February, 1931, by the American, Mr. C. L. Cummins. Eyston, who raised the speed record to 104.86 m.p.h. for the kilometre, drove a comfortable saloon capable of seating four people, fitted with a six cylinder A. E. C. heavy oil bus engine, of a type identical to that fitted to many London omnibuses. The engine develops 130 brake horse power, weighs only 1,414 lbs. including the fly-wheel and all auxiliaries, and was fitted in a racing chassis with an over-all width of only 29½ inches.

Two old-established records retained for United Kingdom.

The United Kingdom has held the world standing start records for the mile and kilometre for a number of years, the former since 1929, when Kaye Don, with a four litre Sunbeam, averaged 100.77 m.p.h., and the latter from 1926, when the late Parry-Thomas with his Thomas Special attained 86.90 m.p.h.

John Cobb with his Napier-Railton car, at Brooklands, recently made an attempt on both records and secured the mile standing start record with 102.52 m.p.h. At that attempt he also beat the record put up by Parry-Thomas for he recorded 88.11 m.p.h. for the kilometre.

Almost simultaneously with this, however, a Swiss driver had at Montlhery, with a 2800 c.c. Maserati car, reached 88.33 m.p.h. for the standing start kilometre record, and on learning this Cobb later made a second attempt, being successful in beating the Swiss record by one-twentieth of a second to 88.56 m.p.h. During this attempt Cobb put up the fastest speed ever recorded at Brooklands in covering a flying kilometre at the average speed of 143.67 m.p.h., thus beating Kaye Don's record of 140.95 m.p.h. over the same distance.

Madrid orders United Kingdom oil engine buses.

Having found that the United Kingdom double decker bus provides a satisfactory solution to their traffic problems, the Madrid Tramway Authorities are rapidly making plans to extend their undertaking, and have placed a further order for 12 Leyland "Titans." That Madrid is seriously and quickly tackling its transport difficulties is obvious from the fact that 18 months ago a double decker had never been seen in Spain, until a Leyland "Titan" which differed in no way from the English standard type, except that the entrance was arranged at the offside, made its appearance in the streets of Madrid. So successful were these trials that further orders for United Kingdom double deckers were soon placed, including one for a fleet of Leylands.

New Safety Glass.

An entirely new type of safety glass has been introduced by the Triplex Safety Glass Company and is already being fitted to 1934 export models of several well-known United Kingdom makes. This new glass is made by a special electrical heat treatment process which transforms its texture. The glass does not fly when broken like ordinary glass; it merely crumbles away into crystals, suggestive of coarse sugar, and so shaped that they can be handled. Known as "Triplex Toughened," it is remarkably strong and flexible, and will resist wide extremes of climate. It is not harmed by sudden changes in the weather, and the sun's rays will not affect

its appearance or its physical qualities. "Triplex Toughened" consists of one pane only and can thus be guaranteed against discoloration, blisters and other defects which may arise in laminated types of glass when used in hot countries. Within wide limits this new glass can be twisted and bent without breaking. It will bear a load three or four times as great as that needed to break ordinary glass of the same thickness, and in actual test a pane measuring 45 inches by 10 inches and only $\frac{1}{4}$ inch thick, supported the weight of five girls. A steel ball which smashed ordinary glass when dropped from a height of only 9 inches had to be dropped from a height of 156 inches before it smashed a pane of "Triplex Toughened" of exactly the same thickness. In a heat test, molten lead registering a temperature of 620 degrees Fahrenheit, nearly three times that of boiling water, was poured on one side of a test sheet of glass, and as soon as it had set, cold water was poured on the other side without damaging the pane. The glass has been successfully tested to 15 degrees below zero or 47° F. of frost.

CYCLES AND MOTOR CYCLES.

By a Special Correspondent.

The fact that there have been three big shows for bicycles in one year in London seems to show that all is well in this particular branch of British industry. This is indeed proved to be the case by the latest exhibition, the Motor Cycle and Cycle Show held at Olympia, the most comprehensive show of this kind ever held in any country.

In these days of hustle and hurry it may appear strange that the pedal-bicycle should enjoy a boom. Whatever may be the psychological reason for the increasing popularity of this "old-fashioned" machine, it is a fact that all the British firms engaged in its production are working at high pressure. One Birmingham firm alone, which a couple of years ago had an output of 40,000 machines in a year, now manufactures as many in a month, while another company is turning out about 2,000 machines a day.

In the home market the year has been a record one, and the demand from overseas has been most satisfactory. A year ago Great Britain exported 127,000 bicycles. In the first 10 months of 1933 the figure had risen to

158,000, while the export of bicycle parts alone in three years has increased in value from £728,000 to £1,129,000.

As an old and practically fully developed invention, the pedal-cycle cannot be expected to undergo radical changes. The fine collection of machines at the Olympia Show demonstrated that it is only attention to detail which can improve on an article already so nearly perfect. Every machine on show was so light that it could easily be lifted and held aloft by one hand. The lighting system of most new machines is all-electric and resembles that used in modern motor cars; saddles are softer and multiple sprung; brakes are so efficient that the cyclist can pull up in his own length with perfect safety; frames are stronger and lighter; and the prices are lower than ever before.

The section for motor-cycles and cycle-cars offered several novelties, although attention mainly appears to have been centred on greater comfort, silence, and economy. Cleanliness seems to be the watchword of the day, so we now find enclosed power units and rarely see exposed valve mechanisms. Thus, at the end of a drive through mud and rain, the machine can be cleaned down with a hose pipe in a few minutes. The same cleanliness is demonstrated in the general design, most machines being finished in rustless chromium plating, with brightly coloured cellulose enamelled tank panels. The frames are invariably built of tubes, ensuring minimum weight and maximum strength.

The unusually wide variety of types ranged from small lightweights, priced at little more than the cost of a first class pedal-cycle, to powerful solo mounts capable of a speed of 110 miles per hour. The most interesting novelty was perhaps a 500 c.c. machine equipped with fluid flywheel and pre-selector gear. As gear-changing has never presented any difficulty to motor-cyclists, this model may appear to be sheer luxury, but it certainly effects a smoothness which previously one would have imagined impossible to achieve. Another interesting newcomer is a 150 c.c. machine with a tiny cylinder horizontally placed, while a third attractive novelty is a vertical twin water-cooled two-stroke engine, entirely enclosed.

In the section for three-wheeled cars special interest attached to a five-horse-power Diesel engine which

enables a tricar to cover 55 miles at a cost in fuel of about fourpence. These tricars are very popular in Great Britain, being taxed, within the 8 cwt. limit, as motor-cycles, cheap in insurance and very cheap in running. Several of the models are built on motor car lines, comfortably accommodating four persons.

Well over a million visitors were admitted to the Exhibition. The manufacturers concerned were delighted with their success, and with the general admission that they were beating the whole world with the quality of their products. Buyers came from 27 foreign countries. Germany did not place many orders, but her trade papers sent the largest party of technical journalists. Italy, Switzerland, India, and Holland all placed large orders. One firm alone is sending two hundred motor-cycles to Milan, and one hundred to the Transvaal. A representative from Russia was particularly interested, and he expressed the opinion that British products were superior to the Continental machines which he had been accustomed to buy.

SHIPBUILDING.

August and November stand out in 1933 in the placing of orders for merchant shipping tonnage with United Kingdom shipbuilders, the tonnage placed in November being estimated at not less than 100,000 tons, a welcome advance on the other months. Most of the orders were secured by Clyde and Belfast yards and include 5 refrigerator cargo vessels, 4 motor tankers, a passenger vessel for the Australian trade, a cargo steamer for the Brocklebank Line, 3 steam-driven colliers for London owners, coasting vessels, etc. These, together with a few additional orders placed during the first half of December, make present prospects much brighter than for some considerable time.

It is unlikely, however, that the December quarterly shipbuilding returns will reflect to any appreciable extent the effect of the new orders, as actual construction could be commenced only on a small proportion of the vessels before 1934. The effect, however, should be appreciable in the succeeding quarter's returns.

Contracts secured.

1. The Orient Steam Navigation Company, Limited, have placed with Messrs. Vickers-Armstrongs, Ltd., an

order for a passenger and cargo steamer for their Australian service. The vessel will be a development of the design of and slightly larger than the 20,000-ton "Orontes" and she will be constructed at Barrow. Accommodation is to be provided for first and tourist class passengers only.

2. Messrs. Harland and Wolff, Limited, have been awarded a contract for a target towing tug for the War Office. The vessel will be 112 feet in length and will be propelled by Diesel engines of the Harland-B and W type. She will be laid down at the company's Govan yard and the machinery constructed at their Finnieston Diesel Engine Works, Glasgow.

3. Smith's Dock Company, Limited, North Shields, have secured orders from Capt. J. Oddsson and Hellyer Brothers, Limited, Hull, for a number of steam trawlers for the White Sea and Bear Island fisheries.

4. Messrs. Harland and Wolff have received orders from the South African Railways and Harbour Administration, Cape Town, for the construction of two tugs, to be equipped with triple expansion engines of 1,400 i.h.p. each. They will be built at the firm's Govan yard.

TEXTILES.

COTTON.

The cotton delegation which recently returned from India, has presented its report and it appears to be generally agreed that what has been accomplished has justified the sending out of the mission. It is felt that a much clearer understanding of Lancashire's and India's different points of view has been established and this should go a long way to promoting mutual co-operation in the consideration of present and future problems.

The movement started amongst spinners for united action to improve prices has developed and now embraces spinners of Egyptian, fine and medium count American, and hosiery yarns. Meetings are being held with the object of linking up and co-ordinating the various mills concerned in order to constitute unified sections of Egyptian and American spinners. Negotiations are also proceeding for framing a uniform list for weavers' wages and in a more comprehensive way a draft scheme for the

reorganisation and statutory control of the whole of the cotton industry of Lancashire has been drawn up.

There was a welcome improvement in the export of cotton yarns and piece-goods during November, compared with November, 1932. Yarn exports totalled 12,671,000 lbs. against 9,940,000 lbs. in November, 1932. 170,463,000 sq. yds. of cotton piece-goods of all kinds were exported in November, 1933, compared with 159,210,000 in November, 1932, and the former figure is the highest for any month since April.

UNSHRINKABLE FABRICS OF COTTON AND LINEN.

A New Process.

The Bradford Dyers' Association recently demonstrated the fabrics and machinery illustrating a new patented method of shrinking textile fabrics which marks an important stage in textile development. The event has had to wait upon the conclusion of an agreement between the Bradford Dyers' Association and the Cluett Peabody Company Incorporated, of the United States. This agreement provides for the simultaneous development of the new methods by the two undertakings. At present the process is being applied to fabrics of cotton and linen. Its application to wool and other textiles is in the experimental stage.

The demonstration included finished fabrics and made-up garments such as overalls, nurses' uniforms, children's dresses, and men's shirts, each in three different states: (1) Finished and made-up, but of untreated fabric; (2) the same sized article of the untreated fabric after it had undergone a normal laundering and suffered the usual shrinkage; (3) the same article made-up out of the processed fabric. In the last case the original dimensions of the made-up garment were fully preserved although the garment had been laundered, and it was stated that no subsequent laundering would shrink it in any degree.

"Rigmel" machines render the fully finished textile fabric unshrinkable. The process is one of mechanical compression of the fabric, a condensation, so to speak, of its warp which is unalterable by anything done in the ordinary washing.

According to the Bradford Dyers' Association the process now makes it possible to place on the markets of

the world cotton and linen garments and materials which could be certified unshrinkable. One of the greatest defects in two of the principal textile fabrics will thus be eliminated.

WOOL.

The remarkable improvement in the wool textile industry is emphasized by the decrease of unemployment in the industry. The percentage of insured workers unemployed in October was 8·7 compared with 10 per cent. in September and 16·5 in October, 1932. The present low figures can be better appreciated when compared with 1931, in which year the percentage was 27·6 and for the whole of 1932, 19·8 per cent. The wool textile industry in fact has the smallest percentage of unemployment amongst the United Kingdom staple trades.

An advance of 15-20 per cent. over the last series was recorded at the closing wool sales in London. Yarn quotations are very firm and machinery generally is well employed. Fabric prices are also advancing in sympathy with wool and semi-manufactures. The chief wool-textile exports for the eleven months ended November 30th, 1933, compared with January-November, 1932, were as follows:—

	<i>Jan.-Nov., 1933.</i>	<i>Jan.-Nov., 1932.</i>
Wool tops (centals of 100 lbs) . . .	123,981	371,446
Woollen and worsted yarns (lbs.) . . .	39,913,100	31,551,300
Woollen and worsted tissues (sq. yds) . . .	86,146,500	74,407,000

MOHAIR.

There is evidence of mohair again coming into fashion, and there appears to be a vogue for mohair astrakhans, rugs, particularly motor rugs, and mohair plush. Prior to 1914 the retained imports of mohair reached nearly 30 million lbs. a year, but they have shown a marked fall since the war, being 18 million lbs. in 1924 and averaging only 13 million lbs. annually from 1925-1930, 10 million lbs. in 1931 and 8 million lbs. in 1932. The imports for the first ten months of 1933, however, are nearly twice as large as in the same period of 1932. Mohair is used in the manufacture of braids, linings, etc., as well as pile fabrics, and it is in the lining trade that artificial silk has supplanted mohair to a great extent and been the cause of the de-

clining mohair trade. It would appear that this decline has now been checked.

Mohair yarns are grouped with alpaca and cashmere in the export returns, and the eleven months' exports for the last three years (mostly mohair) have been 3,718,100 lbs. (1931); 2,970,400 lbs. (1932) and 4,161,300 lbs. (1933). The exports of tissues containing mohair were:—

	<i>Jan.-Nov., 1931.</i>	<i>Jan.-Nov., 1932.</i>	<i>Jan.-Nov., 1933.</i>
Mohair, alpaca and cashmere (not being pile fabrics) (sq. yds.) . . .	1,590,200	1,291,700	1,021,600
Wool and mohair plushes, and other pile fabrics (sq. yds.) . . .	219,300	290,700	287,700

LINEN.

Business in the local flax markets continues brisk and supplies are good. Prices average from 8s. 6d. to 9s. per stone. Exports of yarns during November, 1933, though a little below the figure for the previous month are still well maintained at £77,423 and compare satisfactorily with £45,892 for November, 1932, and £47,445 in November, 1931.

Exports of piece-goods during November at £300,636 have fallen about 20 per cent. below the previous month's figure, which was, however, high, and are rather better than the figures £279,322 and £295,273 for November, 1932 and 1931.

Exports of piece-goods to the United States of America show a considerable decrease during November as compared both with October and with the corresponding month in the previous two years. The figures are: November, 1933, £110,997; October, 1933, £156,589; November, 1932, £122,689; and November, 1931, £155,348. Other markets which have failed to maintain during November the improvement of recent months are Brazil, Australia and China. Canada, however, and several of the smaller markets, notably Argentina, New Zealand and British India, show an increase.

Exports of damask table linen for the month of November are entered at £68,806, as compared with £63,828 for November, 1932, and £98,027 for November, 1931.

Imports of linen goods into the United Kingdom during November were valued at £23,450, as compared with £35,858 and £79,932 in November, 1932 and 1931.

The total values of exports of linen goods from the United Kingdom during November, 1933, 1932 and 1931, were respectively £517,991, £489,892 and £555,726.

Total exports of linen goods from the United Kingdom during the 11 months ended 30th November, 1931, 1932 and 1933, were respectively £4,981,112, £4,764,468 and £5,284,959.

The quantities of linen piece-goods exported during the same periods were 59,821,900, 59,626,600 and 71,601,300 square yards.

POTTERY AND GLASSWARE.

Improved conditions have been maintained in the Potteries. The latest published figures in regard to unemployment indicated that there were 8,692 workers either unemployed, working short time or stood off temporarily. This is 234 fewer than a month ago and no less than 5,574 fewer when compared with 12 months ago.

There are many indications that the demand for Christmas trade, now concluded, has been satisfactory, having regard to present conditions. A quiet period, during the next few weeks, is anticipated, but prospects in the New Year, both for home and export trade, appear to be promising.

Exports of pottery during November, 1933, were valued at £299,450, compared with £259,059 for the corresponding month of 1932, an increase of £40,391. This is now the fourth consecutive month of 1933 to show an increase in the value of exports when compared with the preceding year.

Following are details of the total quantity and value of the exports of pottery of all classes (excluding bricks) for the first 11 months of 1933, with comparative figures for the two preceding years:—

	<i>Quantity</i> <i>cwts.</i>	<i>Value</i> <i>£</i>
January-November, 1933 . .	2,325,827	2,642,663
January-November, 1932 . .	2,347,208	2,721,535
January-November, 1931 . .	3,616,703	3,217,127

The following statement gives details for each section of the industry:-

	Value of Exports.			Percentage of decrease 1933 compared with 1932.
	1933.	1932.	Decrease.	
	£	£	£	
Tiles (all classes) . . .	180,400	185,474	5,074	2.7
Sanitary ware . . .	547,023	516,895	30,128 (Inc.)	5.6 (Inc.)
China ware . . .	202,189	215,403	12,914	6.0
Electrical porcelain . . .	58,255	88,658	30,403	31.3
General earthenware . . .	1,357,148	1,372,055	14,607	1.1
Stoneware . . .	22,279	29,551	7,275	24.6
Refractory goods and clay products not elsewhere specified . . .	274,769	313,196	38,727	12.4
Total . . .	2,642,663	2,721,535	78,872	2.9

The following table deals with the various exports markets for the periods in question:—

	Value of Exports.		Inc. or Dec.		Inc. or Dec. per cent. over 1932.	
	1933.	1932.	Inc.	Dec.	Inc.	Dec.
	£	£	£	£		
Canada . . .	194,558	569,420	—	374,862	—	14.9
United States . . .	220,941	236,218	—	17,277	—	7.3
Irish Free State . . .	211,355	257,057	—	15,702	—	6.1
Australia . . .	253,102	217,015	36,087	—	16.6	—
Argentina . . .	137,247	119,177	18,110	—	15.2	—
Brazil . . .	117,913	70,924	46,985	—	66.2	—
South Africa . . .	162,722	173,018	—	11,226	—	6.5
India . . .	110,086	131,303	—	21,217	—	16.1
New Zealand . . .	98,157	116,181	—	18,024	—	15.7
France . . .	21,213	27,150	—	5,937	—	21.8
Other countries . . .	795,329	800,838	—	5,509	—	0.7
TOTAL . . .	2,642,663	2,721,535	—	78,872	—	2.9

For the month of November, 1933, the value of the exports of glass and glassware was £127,112, compared with £109,303 for the corresponding month of 1932, an increase of £17,809.

Following are figures of the value of exports of glass and glassware during the first 11 months of 1933, with comparative figures for the two preceding years:—

	£
January-November, 1933 . . .	1,153,551
January-November, 1932 . . .	1,166,735
January-November, 1931 . . .	1,260,715

PAPER.

The improvement in the paper industry reported last month is being maintained. Practically all sections of the industry are sharing the increased business including the esparto section.

The quantity of paper and paper stationery exported during November is rather less than that exported for the same month in 1932, but it shows a considerable increase over 1931. The figures are as follows:—

		Cwts.	£
1933	. . . . .	356,374	585,104
1932	. . . . .	357,712	585,873
1931	. . . . .	311,751	592,580

The decrease in the exports in November compared with the same month of 1932 is due to the reduction of printing paper exported to New Zealand and Other British Countries which decrease amounted to 24,770 cwt.; otherwise there was a slight increase in the export of other grades of paper, especially writing paper.

The figures for the first 11 months of 1933, as compared with the same period for 1932 and 1931 are:—

		Cwts.	£
1933	. . . . .	3,479,476	5,646,513
1932	. . . . .	3,582,582	5,982,618
1931	. . . . .	2,989,939	5,803,683

The British "New-Wrap" Company, Limited, of Wigton, Cumberland, have recently succeeded in developing a new grade of transparent wrapping known as "Rayophane Zephyr". This material which is being especially produced for the wrapping of soft goods, is claimed by the makers to be the thinnest viscose paper to be produced in the United Kingdom retaining high tensile and bursting strengths.

THE UNITED KINGDOM ELECTRIC CABLE INDUSTRY.

By **Llewelyn B. Atkinson, M.I.E.E., A.M.Inst.C.E.,**
Director of the Cable Makers' Association.

Historical Summary.—As a specific industry the making of insulated cables for conveying electric currents is of British origin. This is mainly because telegraphy founded on the inventions of Wheatstone was of United

Kingdom origin. The earlier telegraphic conductors were either overhead wires or wires covered with cotton and saturated with paraffin wax. Then gutta percha was adopted and probably for the small currents used in telegraphy no superior material could be found, but its defect of softening at a low temperature renders it unsuitable for heavier lighting or power cables. The experience gained with gutta percha insulated cables, armoured with iron wire, for submarine work led to the decision to connect America with England under nearly 3,000 miles of ocean which was successively accomplished in 1858. This was followed by the coupling up of continents and islands by submarine cables which were mostly made and owned in the United Kingdom. Thus when about 1880 the solution of the problem of electric lighting by efficient dynamo electric machines, in conjunction with the modernised arc lamp and incandescent lamps, was achieved, there were already in existence insulated cable works ready to supply the requirements of the new industry. The making of insulated cables in the United Kingdom thus had a technical start which it has since maintained.

Cables for Light and Power Purposes.—To-day the bulk of cables used for light and power purposes come under the following heads:—(1) *Cables insulated with india-rubber*, (2) *Cables insulated with paper impregnated with oils*; this latter group may be sub-divided into low tension cables, high tension cables and extra high tension cables.

(1) *Cables insulated with india-rubber.*—In the early days of the heavy current electric era, these were the only cables generally applicable, both for underground use and for the internal wiring of buildings. It is true that they were expensive, as the price of india-rubber was high, and this led to the endeavour particularly in America to substitute cheaper materials, notably braidings or wrappings of cotton or other fibres and thin saturation with insulating waxes of which ozokerite was the most successful. Cables are insulated with pure rubber made into a thin sheet generally by dissolving it in a solvent and spreading the pasty mass on a sheet of cloth from which, after drying, it is removed and cut into strips to be applied to the conductor. With good qualities of rubber, such cables run in casings or tubes in dry surroundings and in the dark give excellent results; there are frequent cases of such wires being removed after 35

years' service and found to be still quite good. Where, however, as in most cases damp has to be combated, the practice is to cover the pure rubber with a further layer of vulcanizing rubber and to vulcanize the whole at a temperature of 285°-300° F. In addition to the advantage of vulcanized india-rubber in withstanding moisture, it is mechanically stronger, but it is usual to cover the rubber insulated cable of either class with a cotton or hemp braiding, which is treated with a preservative compound. This covering gives additional mechanical protection and also protects the india-rubber from air and moisture, both of which tend eventually to cause chemical alteration and depreciation. The call for simple methods of wiring existing buildings or new buildings of a cheap class without pulling up the floors or cutting the walls and yet avoiding the rather unsightly method of fixing metal tubes on the surface, has led to the development of wiring systems in which the conductors are insulated with rubber and protected by a further covering of specially tough rubber which originally was of the composition used for solid car tyres. Such wires are frequently made in double form (twin) and are neatly fixed to the surface of the wall or ceiling, being painted to match these. Such protected wires with a flexible stranded conductor, are also used for flexible connecting wires for portable domestic apparatus. In place of the tough rubber protection, similar systems utilise a metal covering of copper or hard lead alloys. Whilst india-rubber insulated cables have been highly successful for internal work, they did not prove suitable for underground use, when drawn into pipes, and very soon an effort was made to find a more suitable and less costly cable for this purpose.

(2) *Paper insulated cables*.—About 1887 Ferranti introduced the use of paper treated with an impregnating compound as a cable insulator, making with this the first high pressure (10,000 volts) cable for the Deptford to London transmission. In that case there was an inner conductor in the form of a solid copper rod, covered with impregnated paper, round which was an outer conductor in the form of a copper tube, the whole being drawn into an iron pipe. The cable was made in 20 feet lengths and jointed by mechanical joints. Whilst this was very successful and remained in use for over 30 years, it is clear that something more flexible was needed for general use. In 1845 Professor Charles Wheatstone had patented

the method of covering an insulated conductor with a lead tube and this idea was revived successfully by Boril in France in the early eighties, using insulating waxes, and the impregnated paper cable became a success when the paper was applied in strips about 1 inch wide and was covered with lead. To-day for all low pressure work in the streets, etc., such cables are standard practice. Gradually as the technique was developed the working pressure for which they could be used advanced by stages to 20,000 volts, then 30,000 volts, and some cables with 60,000 volts were successful, though others at this pressure gave trouble. These difficulties were largely removed when the practice became general of covering each core separately, either with lead or copper foil or finally paper metallized by spraying molten metal on to it. These coverings are connected together and to the lead sheath. When attempts were made to use paper insulated cables for still higher pressures, it was found necessary to provide for the breakdown likely to arise should empty spaces exist or be formed by the impregnating compound being driven out by expansions due to the heating of the conductors or by the bending of the cable in laying or otherwise, for in these cases electric discharges take place within the insulation eventually causing a breakdown. Several methods are being used: (a) The cable has connected to it elastic oil reservoirs so that if expansion of the oil forces it out, the elastic reservoir returns it. (b) The cable is laid in an outer iron pipe capable of supporting a high pressure and this outer tube is filled with air or gas under great pressure so limiting the oil expansion and as the oil contracts pressing the lead sheath again into the original dimensions. (c) The cable itself is filled with a gas under high pressure so that even if voids are formed they are filled with a gas under pressure and no discharges take place. (d) The cable and its lead sheath are made elliptical in section, that on the expansion of the oil filling they become more nearly circular, giving a greater internal volume, returning on cooling to the elliptical form. By one or the other of these devices paper insulated cables are constructed carrying up to 132,000 volts and are under construction for 230,000 volts.

Telephone Cables.—The problems here presented are quite different to those for light and power, it being necessary to avoid capacity or so called absorption phenomena which would result in the distortion of the electric

currents which are to reproduce speech; india-rubber or impregnated paper are unsuitable. The ideal medium would be a vacuum or air and as an approach to the latter each wire is covered with a thin spiral of paper, a number of such wires are grouped together, and the whole enclosed in a lead pipe through which dry air is drawn, so as to remove all moisture. A great number of such wires being enclosed in one pipe, the arranging of the wires and their groups is important to prevent cross talking, that is the current variations in one pair of wires affecting the current in another pair.

This is primarily a matter of design, but to make that effective, great accuracy of manufacture is necessary so that the individual pairs of wire have identical electrical properties (constants). By co-operation between United Kingdom manufacturers and the engineers to the British Post Office, a standard has been reached which is believed to be higher than that existing elsewhere.

Premier Position of United Kingdom Industry.—It will be realised that the successive stages of advance which have been mentioned have necessitated constant research, and periodical equipment and re-equipment of the United Kingdom factories producing these cable products. More and more accuracy of manufacture is required, more scientific control of the raw materials both as to mechanical strength and as to electrical and chemical properties, and both on the mechanical and the technical side these factories are perpetually kept up-to-date. The high standards set up by the Cable Makers' Association are known throughout the world and the result is that in the home and export production of cables of all kinds the United Kingdom cable industry leads the world.

CATALOGUE LIBRARY.

The undermentioned catalogues relating to United Kingdom manufacturers have recently been received and may be consulted by *bond fide* firms or individuals at the Office of His Majesty's Senior Trade Commissioner in India, Fairlie House, Fairlie Place, Calcutta.

<i>Names and Addresses.</i>	<i>Description.</i>
Belling & Co., 313, Regent Street, London, W. 1.	Belling Electric Fires.
Britannia Batteries, Ltd., 233, Shaftesbury Avenue, London, W.C. 2,	Pertrix Batteries for Motor car lighting, stationary lead accumulators, Tubular Batteries, Pertrix Torch Batteries and other Pertrix Products.

<i>Names and Addresses.</i>	<i>Description.</i>
British Klemm Aeroplane Co Ltd, Hanworth Aerodrome Victoria Road, Feltham Middlesex.	Klemm low-wing monoplanes.
Brooke Tool Manufacturing Co., Ltd., Warwick Road, Birmingham.	Engineer's small tools.
Crane Studio, Ltd., Crane Court, Fleet Street, London, E.C. 1.	Advertising Studio.
F. J. Edwards, Ltd., 359-361, Euston Road, London, N.W. 1.	Sheet Metal Working Machinery and Machine Tools.
Holland & Holland, Ltd., 98, New Bond Street, London, W. 1.	Guns, Rifles, etc.
Morris Rose & Co., Ltd. [in- corporating John Grey & Sons (London), Ltd.], 57, City Road, London, E.C. 1.	Musical Instruments.
Sheffield Shears Co., Ltd., Esesco Works, Sheffield	Shears, Trimmers and Pruners.
Switchgear & Equipment, Ltd., Delavox Works, Banbury, Oxon.	High Tension Switchgear.
Thos. W. Ward, Ltd., Albion Works, Sheffield.	Reconditioned Machinery.

The catalogue marked with an asterisk has also been received in the Office of His Majesty's Trade Commissioner, 3, Wittet Road, Ballard Estate, Bombay, where it may also be consulted by *bonâ fide* firms or individuals.

In addition, His Majesty's Trade Commissioner, Bombay, has recently received the undermentioned catalogue:—

<i>Name and Address.</i>	<i>Description.</i>
Gross, Sherwood & Heald, Ltd, Barking, Essex	Paints, Varnishes, Colours, Enamels, Distempers, etc.

H. M. TRADE COMMISSIONERS IN INDIA.

Calcutta—

Sir Thomas M. Ainscough, C.B.E.,

*His Majesty's Senior Trade Commissioner in
India and Ceylon.*

Mr. R. B. Willmot,

His Majesty's Trade Commissioner at Calcutta.
Post Box No. 683, Fairlie House, Fairlie Place.
Telegraphic Address.—"Tradcom, Calcutta."
Telephone No.—"Calcutta 1042."

Bombay—

Mr. W. D. M. Clarke,

His Majesty's Trade Commissioner at Bombay.
Post Box No. 815, 3, Wittet Road, Ballard
Estate.
Telegraphic Address.—"Tradcom, Bombay."
Telephone No.—"Bombay 23025."

Ceylon—

Imperial Trade Correspondent,

The Principal Collector of Customs, Colombo.

With Compliments.

FEBRUARY



1934

The Commercial Bulletin

*A Monthly Review of Official and other
announcements relating particularly
to British Export Trade*

Issued by
**HIS MAJESTY'S SENIOR TRADE COMMISSIONER
IN INDIA AND CEYLON.**

**FAIRLIE HOUSE,
FAIRLIE PLACE,
CALCUTTA.**

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GENERAL.

The main feature of United Kingdom trade for 1933 that emerges from the Board of Trade returns is the steep drop in imports as a whole, coupled with the substantial increase in the importation of raw materials. The figures indicate that, compared with 1932, exports of United Kingdom goods increased by £2,400,000; imports fell by £25,823,000, and the adverse trade balance was reduced by £26,280,000.

The main figures are as follows:

	1933. £	1932. £
Imports	675,817,000	701,670,000
Exports	367,424,000	365,024,000
Re-exports	49,078,000	51,021,000
Adverse balance	259,315,000	285,625,000

As compared with 1932, imports of food and drink declined by no less than £34,000,000 and imports of manufactured articles by £6,710,000. Of manufactured articles the two chief categories in which decreases occurred were iron and steel and machinery.

The rise in the value of imported raw materials, which has coincided with the general improvement of trade which has been discernible during the past few months, totals £15,750,000. The principal increases were in the following commodities:—

Cotton.	Iron ore.
Wood and Timber.	Rubber.
Wool.	Non ferrous ores.
Hides and Skins.	

With regard to the export of articles manufactured in the United Kingdom substantial increases are shown in the undermentioned goods:—

Non-ferrous metals.	Hardware.
Iron and Steel.	Leather.
Wool.	Chemicals.
Electrical goods.	Drugs.
Vehicles.	Dyes.
Cutlery.	Rubber.

The only raw material exports of which advanced considerably was wool. This showed an increase in value of £1,861,000.

The figures for December alone compared with those for November and for December, 1932, are as follows:—

	<i>December.</i> <i>1933.</i>	<i>November.</i> <i>1933.</i>	<i>December.</i> <i>1932.</i>
	£	£	£
Imports	63,162,000	63,734,000	60,666,000
Exports	30,430,000	34,435,000	32,445,000
Re-exports	4,043,000	3,619,000	4,133,000
Adverse balance	25,689,000	25,680,000	24,088,000

It must be remembered that last December had only 24 working days compared with 26 in November and 25 in December, 1932.

The latest Ministry of Labour returns show a further substantial increase in the number of employed persons. The number of insured persons in work on 18th December was 52,000 more than a month before, and 568,000 more than in December, 1932. With the exception of the month of July, when there was a very slight increase, the unemployment figures have shown a steady and progressive decrease throughout 1933. In 12 months the number of unemployed workpeople has fallen by half a million.

A NEW PROCESS FOR PLATING METALS.

An English scientist, Captain Finch of the Imperial College of Science and Technology, London, recently established some very important facts regarding the surface of polished metals. By a series of experiments he has proved that, when it is desired to plate the surface of a metal, a polished surface is more receptive to the plating than an unpolished one. He has shown that a polished surface receives plating as water receives snowflakes which fall on it: the new plating rests for an instant, then disappears into the surface of the metal and, at a certain moment, the new plated surface remains. He found that films of metal deposited on unpolished surfaces are easily rubbed off; but that films on polished metal cannot be completely removed, and give efficient protection against corrosion.

These experiments are capable of important industrial applications. They will mean that iron and steel will

be capable of almost complete protection against corrosion. They may mean also the simple manufacture of a permanently stainless plating for all sorts of machinery, motor-cars, etc. A further development will be the utilisation of lighter alloys in aircraft, to withstand the action of rain and atmosphere. The chief difference between the newly discovered process and ordinary galvanising is that the new process can be applied at ordinary temperatures, the protective layers are very much thinner and stronger, and the final appearance of the surface is much more attractive. If expectations are realised, it will be one of the most important discoveries in the history of metallurgy.

NEW DOMESTIC REFRIGERATOR.

On page 2 of the Commercial Bulletin for July, 1932, reference was made to the B.T.H. electric refrigerator which was to be produced at the British Thomson-Houston Works at Rugby. These refrigerators, which are 100 per cent. British manufacture, are now available for export to all overseas markets outside the United States of America, the selling arrangements being in the hands of the International General Electric Co. of New York, Ltd., Crown House, Aldwych, London, W.C. 2.

The International General Electric Co. of New York, Ltd., state that they have had severe tests carried out at Rugby and are satisfied that the refrigerators will withstand tropical conditions. Moreover, refrigerators which have been forwarded to Malaya, Egypt, and Nigeria, have given entire satisfaction.

Two models are being marketed, the RS-62 with 11·2 square feet shelf area and 6·8 cubic feet food storage, and the RS-42 with 8 square feet shelf area and 4·6 cubic feet food storage.

The exterior dimensions are:—

Model RS-62.

66 inches high overall.

29 inches wide.

23 inches deep (cabinet alone).

Model RS-42.

65½ inches high overall.

24 inches wide.

21½ inches deep (cabinet alone).

Four ice freezing trays are provided with Model RS-62, giving a total weight of ice of 9 lbs., 80 cubes, whilst the RS-42 Model produces 4½ lbs. of ice, 40 cubes.

Finish.—The refrigerators are finished internally in white porcelain and the corners are rounded so that the entire interior permits of easy and thorough cleaning. The exterior finish is "Sanak", a high-grade lacquer applied on a prepared surface by a specially developed process.

Insulation.—The cabinets are heavily insulated with the best grade material, being protected against entrance of moisture by the outer steel shell, which is sealed or lock seamed at all joints. The insulation is further protected by sealing in a watertight envelope.

All-Steel Construction.—The refrigerators are provided with an all-steel cabinet of strong design, the heavy outer shell being in one piece; no wooden frame is used either in the cabinet or in the door.

Temperature Control.—The temperature control automatically regulates the operation of the refrigerating unit to maintain a uniform cabinet temperature. An easily accessible adjustment dial is provided to vary the temperature to meet individual requirements or special conditions.

FINANCE.

NEW COMPANIES.

The Norddeutscher Lloyd General Passenger Agency (Great Britain), Ltd. was registered as a private company on the 6th January with a nominal capital of £1,000 in £10 shares. The company has been formed with the object of carrying on the business of passenger, general tourist, emigration and transport agents and managers, contractors and organisers of British, Colonial and foreign travel and transport by land, water or air, sellers of passenger tickets on ships, railways, airplanes, etc.

John Butterworth and Son, Ltd.—This company has been registered for the purpose of taking over a business of cotton waste spinners and manufacturers carried on at Dale Mills, Waterfoot. Nominal capital £50,000 in £1 shares.

Chiltonian, Ltd.—This company has been registered as Biscuit Manufacturers, Bakers, etc. Nominal capital £100,000 in £1 shares.

Oakhurst Match Co., Ltd. This company has been formed with a nominal capital of £38,000 in £1 shares.

General Motors, Ltd.—This is a private company registered with a capital of £110,000 in £1 shares in order to acquire the undertaking of a company of the same name now in voluntary liquidation, and to carry on the business of manufacturers of and dealers in motor cars and vehicles of all kinds. General Motors, which was registered in September, 1909, as a private company, is a subsidiary of General Motors Corporation, Delaware, United States of America. Its authorised capital is £52,500, of which £22,500 is issued.

Smith and Nephew Holding Co., Ltd.—This is a private company formed to acquire not less than 90 per cent. of the issued share capital of J. T. Smith and Nephew, Ltd., and Smith and Nephew (Manchester), Ltd., and to carry on business as financiers, chemists, druggists, manufacturers of and dealers in cotton, linen and woollen goods and textile fabrics, etc. Nominal capital £150,000 in £1 shares.

Senior Economisers, Ltd.—This is a private company of ironfounders, engineers, manufacturers of fuel economisers, steam generators, etc. Nominal capital £60,000 in £1 shares.

Robert Barclay and Co., Ltd.—This a private company formed to carry on business as shippers, manufacturers, cotton spinners and doublers, woollen spinners, yarn merchants, etc. Address: 35, Whitworth Street West, Manchester. Nominal capital £350,000 in £1 shares.

J. Pick and Sons, Ltd.—This has been formed as a private company, to take over a business of hosiery manufacturers. Nominal capital £100,000 in £1 shares. Address: Dover Street, Leicester.

A. Reyrolle & Co.'s New Interest.—A new private company with an authorised capital of £500,000 has been formed under the name of the Parolle Electrical Plant Co., Ltd., with the object of undertaking the construction of electrical power and other works, and acquiring interests in manufacturing and other undertakings in any part of the world. The company has acquired from the executors of the late Hon. Sir Charles A. Parsons, shares held by him in C. A. Parsons and Co. £260,000 of the capital of the new company has been subscribed by A. Reyrolle and Co., electrical equipment manufacturers

of Hebburn-on-Tyne. The directors of the new company are: Norbert Merz and H. W. Clothier (directors of A. Reyrolle and Co.) and F. G. H. Bedford, managing director of C. A. Parsons and Co.

AMALGAMATION.

A new deal by Richard Thomas & Co.—Sir William Firth, chairman of the company, confirms the report that his firm has purchased the tinsplate and steel sheet works of W. Gilbertson & Co., of Pontardawe, Swansea Valley.

W. Gilbertson & Co. are an old established firm whose brands of tinsplates, black and galvanised sheets are known in many parts of the world.

INCREASES IN CAPITAL.

	£
Cooke & Nuttall, Ltd. (paper manufacturers)	50,000
The Metropolitan Brick Co., Ltd.	199,900
Hewitt Brothers, Ltd. (brewers)	300,000
James Howden & Co., Ltd. (marine engineers and shipbuilders)	50,000
Bullard & Sons, Ltd. (brewers)	182,000
R. & H. Green & Silley Weir, Ltd. (engineers and shipbuilders)	50,000
Baker Platinum, Ltd.	149,000
The British Plaster Board, Ltd. (plaster board manufacturers)	150,000
John Crowther & Sons (Millsbridge), Ltd. (woollen cloth manufacturers)	250,000

CONTRACTS SECURED.

Order from Iraq.—The Iraqi Government have placed an order for a new issue of postage stamps with Bradbury, Wilkinson & Co., Ltd., New Malden.

Contracts from South Africa.—Contracts valued at £50,000 have recently been placed by the South African Government with United Kingdom firms for the supply of telephones and telephone material, pig iron, printing paper, canvas, and other goods.

Bridge Building in South Africa.—The Motherwell Bridge and Engineering Co., Ltd., of Motherwell, have received telegraphic advice from their South African

agents intimating acceptance of the firm's tender for a substantial tonnage of bridgework. The contract covers the supply of two complete road bridges for the Union of South Africa Public Works Department. The new bridges are as follows:—The Orange River bridge, 1,050 feet in length, comprising six side spans, each 140 feet by 30 feet wide, and one centre span of 200 feet by 30 feet wide; and the Umlaas River bridge, 410 feet in length, comprising two spans each 200 feet by 30 feet wide. The total tonnage of steelwork involved in the two bridges is about 1,500 tons.

Electrical Contract for Liverpool from Lithuania.—A contract has been concluded between the Lithuanian Ministry of Communications and the representatives of the Automatic Electric Co., Ltd., of Strowger Works, Liverpool, for the installation of automatic telephone exchanges at Kaunas and Klaipeda at a total cost of nearly £200,000.

United Kingdom Wireless for Sweden.—The Marconi Company have received an order from the Swedish Royal Telegraph Administration for a broadcasting station of the "super-power" class to replace the existing long-wave station at Motala, in accordance with the Swedish Government's decision to improve broadcasting facilities in that country. The new equipment will be designed and constructed entirely at the Marconi works at Chelmsford. The aerial energy of the new Motala transmitter will be 150 kilowatts unmodulated aerial input, and it will thus be among the most powerful in Europe. The station is so designed that it can be used with an unmodulated aerial input of 220 kilowatts if desired at a later date. An unusual feature of the new transmitter is that it will also be capable of operation as a high-speed telegraph transmitter with a power of 100 kilowatts.

Egyptian Coal Contract Awards.—T. Beynon & Co. have been awarded the contract for the supply of 150,000 metric tons of coal to the Egyptian State Railways.

United Kingdom Steel for Canada.—An order for a million boxes of tinplates, to be delivered in Canada, has been received by Messrs. Richard Thomas and Co. The value of the order is about £700,000.

Sir William Firth, chairman and managing director of the company, attributed the receipt of the above order, despite the depreciation of the dollar, to the recent revision of duties.

THE UNITED KINGDOM IRON AND STEEL INDUSTRY IN 1933.

The iron and steel industry in the United Kingdom played an important part in the improvement which took place during 1933 in the general economic situation. Because of their basic importance in the economic system it was only to be expected that the iron and steel industries in all countries, including the United Kingdom, should share in the general recovery which has been characteristic of recent months, but it is particularly significant that the industry in the United Kingdom has shown a much greater advance than in most other countries.

The history of the past year clearly demonstrates the way in which the United Kingdom iron and steel industry has grasped its opportunity and proved to the world at large its extraordinary recuperative powers. 1933 was the first complete year to show the results of the adoption of a protectionist policy as regards the iron and steel industry. It is true that protective duties were first granted to the iron and steel industry on the recommendation of the Import Duties Advisory Committee in April, 1932, but during the remainder of that year the effects of this policy were largely nullified owing to the extent to which the duties had been anticipated and the consequent accumulation of stocks of foreign material. With the liquidation of these stocks the domestic industry has been able to benefit to the full from the measure of protection which has been granted.

The United Kingdom iron and steel industry faces the future with optimism based upon the noteworthy achievements of the past year, when, after three years of pronounced decline, output in the industry showed a substantial increase. Making allowance for seasonal and holiday influences there was an almost continuous advance from month to month. There was a net gain of 19 furnaces in blast, the number at the end of the year being 81. Pig iron production in December amounted to 409,000 tons compared with 287,000 tons in January; while steel output totalled 669,000 tons compared with 440,000 tons. The total production for the year amounted to 4,120,000 tons of pig iron and 7,000,000 tons of crude steel, representing increases, when compared with the corresponding figures for the previous year, of 15 and 33 per cent. respectively.

During the closing months of last year the steel industry in the United Kingdom was operating at approximately 70 per cent. of estimated productive capacity, a higher rate than in any other country in the world where reliable and comprehensive figures are available. The improvement which took place in the relative position of the iron and steel industry in the United Kingdom *vis-a-vis* the Continental countries is illustrated by the fact that, whereas steel output in the United Kingdom in 1933 was 33 per cent. higher than in 1932, the corresponding increase in the principal Continental producing countries was approximately 16 per cent. The proportion of the total world output for which the United Kingdom was responsible in 1933 was 8.5 per cent. as regards pig iron, and 10.6 per cent. as regards crude steel: these figures showed an appreciable improvement compared with four years previously when the United Kingdom produced 7.8 per cent. and 8.1 per cent. respectively of the world output of pig iron and steel.

This improvement was attributable chiefly to the fact that domestic producers obtained a larger proportionate share of larger absolute volume of domestic trade, which reflected the all-round improvement in the economic position of the United Kingdom. Imports of iron and steel into the United Kingdom declined from 1,590,000 tons in 1932 to 971,000 tons in 1933, and the diversion of this material from Continental to domestic suppliers was of considerable importance in the revival of the industry.

Exports of iron and steel from the United Kingdom last year amounted to 1,922,000 tons compared with 1,887,000 tons in 1932, an increase of approximately 2 per cent. It is a matter for some congratulation that last year the United Kingdom iron and steel industry succeeded, not only in maintaining, but slightly expanding the volume of its export trade. It is unfortunately only too obvious that export trade at the present time is rendered increasingly difficult by the existence of numerous "crisis measures" such as excessive tariff barriers, stringent quota systems, and restrictions on exchange dealings; and these factors, taken in conjunction with the uncertainty regarding the future of many currencies, combine to restrict the outlets for iron and steel goods. Export trade in general cannot be restored to anything approaching a satisfactory level until considerable progress has been made in removing the abnor-

mal restrictions which have grown up during the past two or three years.

The change which has taken place in what may be termed the "balance of trade" of the iron and steel industry in the United Kingdom is evident from the fact that, whereas last year iron and steel exports in tonnage were approximately *double* the imports, in 1931 they amounted to only *two-thirds* of the imports. United Kingdom iron and steel makers are fully aware of the difficulties which have still to be overcome before a satisfactory position can be said to have been attained. Considerable progress has been made during the past year with national schemes of re-organisation and development which, when complete, will assist in the restoration of prosperity to the industry. It must be emphasised however, that schemes of re-organisation are not recent developments, and that during the post-war years the industry has continuously been adopting measures calculated to improve its efficiency.

Among these measures may be mentioned various amalgamations and working agreements between previously competing units for the purpose of making possible economies in the processes of production: schemes for co-operative selling and co-operative propaganda with a view to the expansion of the consumption of iron and steel products: and various measures taken to reduce costs of production by the introduction of technical improvements and by economies in the consumption of fuel as a result of organised co-operative research under the direction of the Iron and Steel Industrial Research Council. It was clear, however, that the beneficial effects of all these measures were restricted in extent as long as the domestic market was left open as a dumping ground for foreign countries, frequently at prices which bore no relation to the economic costs of production.

The adoption of an active policy of protection, designed to stimulate the domestic industry and thus expand its employment capacity, has put an end to such an anomalous situation. The events of the past year give grounds for the belief that the iron and steel industry in the United Kingdom has now entered a new era, and that, while competition for the available volume of business in the future is likely to continue to be keen, the industry is once more in a position to play its rightful rôle in national and international eco-

nomy since its technological efficiency is unequalled by any other country in the world.

MACHINE TOOLS.

MACHINE TOOL AND ENGINEERING EXHIBITION.

The Machine Tool and Engineering Exhibition promoted by The Machine Tool Trades Association, 70, Victoria Street, London, S.W. 1, which was to have been held in 1932, will now be held at Olympia from the 8th to 24th November, 1934.

In the issue of "Engineering" for 5th January, the Secretary of the Association, Mr. Leonard Weight, writes:—

"This Exhibition will represent a great collective effort on the part of the British machine-tool trade to demonstrate to the world the manufacturing resources of the machine-tool trade and the variety, quality and design of the machine tools manufactured in the United Kingdom.

"The great interest aroused by this Exhibition is undoubtedly due to a realization of the fact that the machine tool is the foundation of all engineering and that engineering, in turn, is the bedrock of production and consumption, not only in this country, but throughout the world. The British Empire, as a great commonwealth of nations, can only prosper by the development of new, and the expansion of existing, industries, and in this development and expansion nothing plays a greater part than the machine tool."

THE AUTOMOBILE AND ALLIED TRADES.

A YEAR OF PROGRESS.

The Epic Achievement of the United Kingdom Motor Industry.

There are undoubtedly signs that the period of economic uncertainty and depression has been overcome,

and while it is not to be expected that a trade boom is on the eve of fulfilment, there is no room for doubt that industry in the United Kingdom can face 1934 with justifiable hope and expectation.

Such, at any rate, is the outlook of the United Kingdom Motor Industry which, in a period of almost unparalleled world depression has almost alone amongst the important exporting industries not merely maintained its position, but has made definite advances.

With the general trade improvement now becoming manifest, it can be confidently predicted that very material advances will be made by this industry which is equipped and ready to exploit to the fullest extent the favourable swing of the economic pendulum.

The industry may possibly be said to have experienced during 1933 the best year in its history both at home and overseas, and the progress that has been made can perhaps best be illustrated in tabular form.

Production.

Taken over a period of three years, the production figures relating to United Kingdom motor vehicles are as follows:—

<i>Year.</i>	<i>Cars.</i>	<i>Commercial Vehicles (Goods and Passenger carrying).</i>	<i>Total.</i>
1931 (to end September)	158,997	67,310	226,307
1932 " "	171,244	61,475	232,719
1933 " "	220,775	65,508	286,283

It will be remarked from these figures that during 1933 the production of United Kingdom cars exceeded 200,000 units for the first time in the history of the industry. The output of cars last year was 28.6 per cent. higher than for 1932.

In comparison, it may be mentioned that the production of private cars, in the United States of America decreased from 4,794,898 in the peak year 1929 to 1,186,259 in 1932, while that of commercial vehicles fell from 826,811 to 245,285 during the same period. The figures of production in 1933 will however be higher and up to the end of September the output in the United States of America of motor vehicles of all kinds amounted to 1,672,767 units as against 1,370,678 during the nine months of 1932, but it is not anticipated

that production for the whole year will be much in excess of 33½ per cent. of the 1929 output.

The motor industry in France would seem also to be in a much less favourable position than formerly. The home market has virtually ceased to expand, and during the first nine months of 1933 the French colonies took the major portion of the 19,617 units exported.

Exports.

Satisfactory progress has been made in the export field due, not only to improving conditions in Empire markets, but to the entrance of the United Kingdom vehicle into markets formerly virtually closed to it.

The following table shows the progress made over the past three years:—

		1931.		1932.		1933.	
		No.	Value. £	No.	Value. £	No.	Value. £
Cars	..	17,144	2,649,864	26,950	3,446,145	33,852	4,364,312
Com. Vehicles	..	2,275	786,555	2,016	518,755	2,296	557,909
Chassis	..	5,323	1,079,055	11,129	1,462,474	15,603	1,820,407
Total	..	24,742	4,515,474	40,097	5,427,374	51,751	6,742,637

The progress achieved overseas by the United Kingdom motor industry, whilst attributable in part of late to improved trade conditions, is perhaps more correctly to be traced to a growing recognition in Empire and other markets of the merits of United Kingdom vehicles themselves. The United Kingdom motor industry was responsible also for the launching of a departure in an entirely new field—the introduction and development of the light car, which has shown its ability to provide efficient means of transport at the lowest possible cost of operation. It has certainly provided a satisfactory answer to the requirements of the world for efficient and economic transport, a requirement which the prevailing conditions of world economics has made more than ever of paramount importance.

Sport.

It is not only in home and export markets that progress has been made, but results in the field of sport, both at home and overseas, give ample evidence of the success of the United Kingdom car. The Italian Mille

Miglia, the J.C.C. International Trophy Race, the R.A.C. "Round the Houses" Race in the Isle of Man, the Tourist Trophy Race, the Australian Grand Prix, and many other races, have provided the occasions for the superiority of the United Kingdom car to be triumphantly proved. During the past year, World's and International Class Records have fallen to the United Kingdom, and a glance at the list of records standing at the end of 1933 will show the large proportion which she now holds.

Instances might be given of other performances by United Kingdom vehicles in different parts of the world in which even second hand cars have given abundant evidence of their sturdiness and trustworthy capabilities, but sufficient has been said to prove that in workmanship, design, and construction, the United Kingdom motor vehicle is unsurpassed.

MOTOR-BOATS AND ENGINES.

(By a Special Correspondent.)

Manufacturers of motor-boats and marine engines have shared in the recent general trade revival in the United Kingdom. Encouraged by the growing demand for their products, they have improved their designs and extended their works. Invention has been stimulated and enterprise quickened, and the year has ended with a large number of orders for nearly all the firms engaged in this class of work.

During the course of the year the capacity of the works and yards was considerably increased, and new firms appeared. According to a reliable authority there are now 51 firms in the United Kingdom building motor-boats, 35 making petrol and paraffin engines, 37 making high-speed Diesel-type marine engines, and 7 making out-board engines. They are largely concerned with meeting the needs of the home market, but at the same time they are producing a considerable number of boats and engines for overseas customers.

One United Kingdom firm is now building three small motor-vessels for Burma for service on the Irrawaddy. Each vessel will be equipped with Diesel machinery of about 160 horse power. A coaster of 800 tons equipped with a United Kingdom Polar engine of

725 horse power was recently built for the Canterbury Shipping Company of New Zealand. For a customer in Peru a Lowestoft firm has built a 45 ft. service launch and tug with a speed of 11 knots, the engine being a "National" Diesel of 80 horse power.

From Panama an order has been received for a large general service boat of especially strong construction. The length of this vessel will be 48 feet 6 inches, and the beam 13 feet. Her power will be provided by two "Ailsa Craig" Diesel engines giving her a speed of 10 knots. Even the South Seas are helping to restore prosperity to this particular industry. A motor-coaster with a length of 90 feet has been ordered by a firm at Suva in the Fiji Islands; the engine chosen for this is a "Petter" of 145 horse power. When completed the boat will be dismantled and shipped in sections, to be reassembled at Suva.

To those particularly interested in speed and speed contests one of the events of the year was the feat achieved by Mr. H. Scott-Paine with his little "Miss Britain". It will be remembered that this boat was defeated in the 1933 contest for the British International Trophy, but it is single-engined and the American victor was a multi-engined craft. Later, "Miss Britain" established a world's record for single-engined boats by attaining a mean speed of 101.132 miles an hour on Southampton water. This was a splendid achievement, especially in view of the fact that on the day of the run conditions were far from ideal, and Mr. Scott-Paine hopes to beat this record shortly.

Possibly the main achievement of the industry as a whole has been the vigorous development of the heavy-oil engine. Few will challenge the statement that the British-made high speed marine Diesel engine is the best product of its kind in the world. This class of engine has found great favour with overseas customers; in the United Kingdom it is used particularly for fishing boats of all kinds, and it is being more and more frequently installed in cruising yachts. One Clyde firm recently reported that it had equipped 32 fishing vessels with its semi-Diesel engine during the past few months.

For some time past there has been a demand for the establishment of a service of motor-boats on the Thames, and apparently this demand will soon be met. During the holding of the recent Motor-boat Show at Olympia,

it was reported that an order had been placed for five boats, each of 65 feet in length and with a beam of 13 feet 6 inches, and to accommodate 100 passengers. The type of engine used will be "Paisons". It is expected that 1934 will see a number of new developments in regard to both boats and engines, and United Kingdom manufacturers are looking forward with confidence to considerable trade expansion.

SHIPBUILDING.

According to Lloyd's Register Shipbuilding Returns for the quarter ended 31st December, 1933, there was an increase of 27,779 tons in the merchant tonnage under construction in Great Britain and Ireland as compared with the low figure for the previous quarter, and the present total under construction—331,541 tons—is 106,044 in excess of the tonnage under construction at the end of December, 1932.

Merchant vessels under construction at the end of the quarter were as follows:—

	<i>Number of Vessels.</i>	<i>Gross Tonnage.</i>
Great Britain and Ireland	90	331,541
Other countries	116	425,736
Total for the World	206	757,277

The work in hand in British shipyards at the close of the year thus represents 43·8 per cent. of the total tonnage under construction in the world, a substantial improvement compared with the position 12 months ago when the British proportion was 29·4 per cent.

New construction in other countries showed a falling off of 114,487 tons on the previous year's total.

The comparatively small increase of 27,779 tons during the quarter compared with the work in hand at the end of September does not, however, reveal the full extent of the improvement recently experienced by the industry, inasmuch as several vessels recently ordered have yet to be laid down. The returns at the end of the first quarter this year should therefore show a marked increase on the tonnage now in hand.

The five leading countries abroad are:—Japan, 106,760 tons; France, 90,056 tons; Sweden, 64,640 tons; Holland, 40,540 tons; and Spain, 35,724.

Largest British Coaster.

The new twin-screw motor coastwise liner "British Coast", built at Messrs. Henry Robb's Victoria Shipyard at Leith for Messrs. Coast Lines, Ltd., has created considerable interest amongst coastwise shipowners, marine superintendents and engineers, between 30 and 40 of whom were on board when the vessel ran trials in the Firth of Forth early in January. This coaster, one of the outstanding ships of 1933, is claimed to be the largest and most powerful motor coaster yet constructed. With a length of 230 feet and a dead weight of 1,400 tons, the draught is less than 14 feet, which gives the vessel access to ports hitherto inaccessible to craft of her carrying capacity.

The design and equipment of the vessel represent the most economical marine practice. The "British Coaster", which is fitted with Puller-Diesel engines of 1,250 B.H.P. made in the Govan works of British Auxiliaries, Ltd., achieved a mean speed of 13.35 knots, a performance which is regarded as highly satisfactory by all associated with the production of the ship.

TEXTILES.

COTTON.

The new year opened with a considerable rise in the price of raw cotton—especially fully good fair Sakelaridis—which provoked a welcome increase in enquiry on the Manchester Exchange.

Following upon the price agreements which have been reached in various parts of the spinning industry, the Oldham Master Spinners Association announce, in their annual report, a scheme for the consolidation of the advantages so gained. They propose systematic removal of surplus productive capacity, instead of allowing spindles to be brought back into activity whenever a slight boom occurs, and so to destroy any advantage that might otherwise be gained by the regularly active mills.

Exports during December, 1933, were rather lower than for the preceding month. The figures are as follows:—

	(000's omitted)		
	Dec., 1933.	Nov., 1933.	Dec., 1932.
	lb.	lb.	lb.
Yarn, grey . . .	9,652	11,044	10,135
Yarn, other . . .	1,408	1,627	1,607
Piece-Goods.	sq. yd.	sq. yd.	sq. yd.
Grey . . .	29,621	37,503	37,403
Bleached . . .	48,811	51,648	67,953
Printed . . .	26,725	30,112	34,504
Dyed . . .	43,052	43,545	45,681
Coloured . . .	7,315	7,624	10,282
Total	155,521	170,163	195,823

Total exports for the year 1933, at 2,031,139,000 square yards, show a slight decrease from 1932, though grey piece-goods exports increased. This increase of greys was due to larger takings by Calcutta and Bombay—a feature particularly noticeable towards the end of the year, as appears from the Indian Trade Returns for October. In that month, although Indian imports of greys fell by 11 million yards, the share of the United Kingdom increased by two millions. In other classes of cloth the decrease of imports was by no means so severe in United Kingdom manufactures as in Japanese.

WOOL.

The table given below indicates the shrinkage which has taken place in the export of wool textile semi-manufactures and tissues in the last ten years; 1924 and 1929 have been selected for comparison as years preceding two post-war depressions. In analysing the figures it must, however, be remembered that manufacturers have to a large extent captured the home market during the last two years and consequently have been compensated to some extent for the ground lost in overseas markets. Furthermore, the export figures for 1933 show the growing importance of the Dominions as markets for woollen and worsted tissues. They were, moreover, larger than during 1932 and 1931 and as they have been increasing gradually month by month for some time now there

would appear to be good prospects of making up still more leeway during the coming year.

Wool Tops.

<i>Exports to</i>	1924.	1929.	1933.
	<i>Centals of 100 lbs.</i>		
Germany . . .)	Not shown by quantity.	91,565	119,330
Canada . . .)		64,227	83,165
Sweden . . .)		31,879	58,357
Total to all countries		<u>285,094</u>	<u>458,321</u>

Woollen and Worsted Yarns.

	1924.	1929.	1933.
	<i>lbs.</i>	<i>lbs.</i>	<i>lbs.</i>
Germany . . .	28,143,200	26,259,258	10,626,100
China . . .	2,139,500	6,128,168	3,853,700
Canada . . .	2,759,100	5,550,774	3,549,400
Netherlands . .	3,668,400	3,563,151	1,451,500
Total to all countries	<u>65,892,500</u>	<u>63,612,450</u>	<u>43,535,300</u>

Worsted Tissues.

	1924.	1929.	1933.
	<i>Million sq. yds.</i>		
Canada . . .	15,094	9,837	5,541
U.S.A. . . .	6,898	6,430	932
China	3,944	3,482	3,031
Argentina . . .	3,187	4,457	2,916
Total to all countries	<u>56,943</u>	<u>17,281</u>	<u>32,896</u>

Woollen Tissues.

	1924.	1929.	1933.
	<i>Million sq. yds.</i>		
Japan	29,708	5,317	1,498
Canada	15,098	13,671	1,138
Australia . . .	14,087	5,591	711
China	13,027	4,523	2,753
U.S.A.	10,293	8,922	3,158
Argentina . . .	7,001	7,768	4,606
Germany	1,977	6,731	1,325
Total to all countries	<u>164,740</u>	<u>108,186</u>	<u>61,318</u>

Exports of alpaca, mohair, cashmere and other yarns and tissues of mohair, alpaca and cashmere, furnishing fabrics and flannels show a similar shrinkage last year compared with the above previous periods.

The countries which were the United Kingdom's best markets for semi-manufactures in 1924 and 1929 still retain virtually the same relative positions to-day, although the Irish Free State, Denmark, Sweden and Norway were more important outlets for yarns in 1933 than the Netherlands. Japan came up to second place in 1933 in the exports of worsted tissues. South Africa took fifth and Denmark sixth place. India was seventh while the United States of America dropped to the ninth position. In order of importance as markets for woollen tissues the countries changed positions considerably last year compared with 1924 and 1929, being South Africa, Irish Free State, Argentina, Canada, the Netherlands, Denmark, United States of America, China, New Zealand, and India.

LINEN.

Trade in the local flax markets is well maintained with good supplies. The average price is about 8s. 6d. per stone.

The yarn market shows little improvement.

Exports of yarns for the month of December, 1933, were valued at £65,417 as compared with £62,483 and £45,724 in December, 1932 and 1931 respectively. The total exports of yarn for the year show a definite improvement. The values are: 1933 £748,410, 1932 £529,719, 1931 £499,090.

In piece-goods the exports for the month have decreased to £268,062 compared with £291,574 in December, 1932, and £250,836 in December, 1931. The figures for the whole year, however, show an increase over last year of almost 20 per cent. in value. The comparison for the last three years is: 1933 £3,635,034, 1932 £3,052,614, 1931 £3,128,447. In yardage, too, the total exports are definitely the best since 1925.

The most valuable markets for piece-goods during 1933 were: U. S. A. (£1,493,879), Australia (£333,691), Brazil (£309,716), China (£225,736), Canada (£219,753), British South Africa (£100,631). South Africa and Canada made the most improvement during the year.

Made-up goods are a less satisfactory feature in the trade returns. Damask table linen, handkerchiefs, and

other manufactures of linen and hemp (n.e.s.), all were below the average export value for the month and the year's export figure is below that of the previous year in each item. The comparisons are:—

	1933.	1932.	1931.
	£	£	£
Damask table linen .	642,316	725,632	727,923
Handkerchiefs . . .	321,111	338,764	427,251
All other manufactures of linen and hemp n.e.s.	728,996	760,504	761,246

Imports of linen goods into the United Kingdom during 1933 were valued at £261,261 as compared with £372,660 in 1932 and £699,511 in 1931.

The total values of linen goods exported from the United Kingdom during December, 1933, 1932 and 1931, were respectively £442,916, £498,606 and £445,158.

Total exports of linen goods from the United Kingdom during the years 1933, 1932 and 1931 were respectively £5,727,535, £5,262,860 and £5,426,267.

The quantities of linen piece-goods exported during the same periods were 76,861,800, 65,889,900 and 65,341,700 square yards.

A SUBSTITUTE FOR LINEN.

A New Fabric Perfected which has Many Uses.

Among the important textile discoveries recently made in Lancashire is a new type of cloth, to be known as "Merlin," which will shortly be put on the market by Rylands & Sons, Ltd., of Manchester. This cloth, which can be used for dresses, casement curtains, upholstery coverings, sheetings, towels, and the whole range of table napery, is manufactured by a new process of treating flax and other fibres. Many years of research have been necessary to bring the process to a stage where commercial exploitation was possible.

The process is based on the refining of a raw material hitherto neglected and regarded as unusable. It involves the application of new ideas in regard to spinning, weaving, dyeing and finishing.

It is claimed that fabrics made wholly of the new material will compare with many linen manufactures and can be sold at much cheaper prices. For dress

materials, casement cloths and similar goods it can be used with an admixture of cotton.

Hitherto linen unions have been produced by doubling linen and cotton yarns, or by weaving a cotton warp with a linen weft; but the virtue claimed for the "Merlin" union is that the mixture is made while both are in a fibrous state, giving a perfect blend. The advantages of the fabrics are that they possess remarkable power of absorption, take dyes well, and improve with laundering.

Rylands & Sons have secured world rights covering the machinery used in every stage of the process, and arrangements have been made for the manufacture of fabrics under licence in certain foreign countries.—(*Industrial Britain.*)

POTTERY AND GLASSWARE.

The prospects for trade in the Pottery industry during the coming year appear to be brighter than has been the case for some years. There is a much improved demand to meet home trade requirements, and export trade continues to show a slow but steady increasing tendency. Greatly improved conditions prevail in the Tile and Sanitaryware sections of the industry, both of which are working under conditions of great pressure, whilst a marked improvement has also taken place in the general earthenware section.

Following is a review of the pottery trade for the year 1933, the final figures for exports, as will be seen, again showing a decrease in value compared with the previous year.

The total quantity and value of exports of pottery of all classes (excluding bricks) during the past five years were:—

Year.	Quantity exported. <i>Cwts.</i>	Value. <i>£</i>
1933	2,531,206	2,885,007
1932	2,525,111	2,954,006
1931	3,862,286	3,462,314
1930	4,576,774	5,130,808
1929	5,040,253	6,292,895

the decrease in value in 1933 compared with 1932 being £68,999 or 2·3 per cent.

Although the final figure for the year shows a decrease in value of 2·3 per cent., exports for the last five months of 1933 show substantial increases in value when compared with the corresponding period of 1932. Actually at the end of June, 1933, exports for the six months to that date indicated a decrease of no less than 9·7 per cent. in value when compared with the corresponding period of 1932.

Taking the various sections of the industry, the following indicates the results obtained:—

<i>Tiles (all classes)</i>	<i>Quantity cwts.</i>	<i>Value. £</i>
Exports 1933 . . .	200,501	199,214
„ 1932 . . .	222,736	201,521

representing a decrease of 22,235 cwts. or 10 per cent. in quantity and £2,307 or 1·1 per cent. in value. The demand for tiles to meet home trade requirements has been very heavy during the past 12 months, and it is understood that firms engaged in tile production have been working to their full capacity during that period. Certain extensions to factories are being carried out, and there is every indication that production in 1934 will be on an increased scale, and that full employment will be provided for all the workers available.

<i>Sanitaryware (all types).</i>	<i>Quantity. cwts.</i>	<i>Value. £</i>
Exports 1933 . . .	512,987	603,162
„ 1932 . . .	418,158	566,923

representing an increase of 94,829 cwts. or 22·7 per cent. in quantity, and £36,239 or 6·1 per cent. in value.

Similar conditions to those described in the tile trade have prevailed in the sanitaryware section. Production is being increased where possible, and there is every prospect that 1934 will be a very satisfactory year for this section of the trade.

<i>Chinaware.</i>	<i>Quantity. cwts.</i>	<i>Value. £</i>
Exports 1933 . . .	18,409	220,881
„ 1932 . . .	18,228	231,357

representing an increase of 1 per cent. in quantity, but a decrease of £10,473 or 4·5 per cent. in value. The continued decrease in the value of exports is due principally to the lessened demand for fine chinaware of the luxury type exported, in normal times, principally to

the United States. No substantial improvement in the fine chinaware section of the trade is likely until there is a material change in the general trade conditions in the United States.

<i>Electrical ware (including insulators) and door fittings.</i>		<i>Quantity. cwts.</i>	<i>Value. £</i>
Exports 1933	. . .	19,903	61,869
„ 1932	. . .	31,312	92,355

representing a decrease of 11,409 cwts. or 36·4 per cent. in quantity and £30,486 or 33 per cent. in value.

This section of the industry is confined to a small number of firms, most of whom have been well engaged during the past year on work for the United Kingdom "Grid" scheme.

<i>General earthenware (including Jet, Rockingham and Samian wares, red pottery and terra cotta).</i>		<i>Quantity. cwts.</i>	<i>Value. £</i>
Exports 1933	. . .	431,873	1,474,761
„ 1932	. . .	437,192	1,497,466

representing a decrease of 5,319 cwts. or 1·2 per cent. in quantity and £22,705 or 1·5 per cent. in value.

In value of exports this is the most important section of the pottery industry. During recent months there have been welcome signs of an improving demand in the principal export markets, and there is every reason to hope that the year 1934 will prove to be a more favourable one for this section of the trade.

<i>Stoneware, brown and yellow ware.</i>		<i>Quantity. cwts.</i>	<i>Value. £</i>
Exports 1933	. . .	25,393	25,268
„ 1932	. . .	29,508	32,115

representing a decrease of 4,115 cwts. or 14 per cent. in quantity and £6,847 or 21·3 per cent. in value.

This section of the industry is of small relative importance in export trade.

<i>Refractory goods and clay products not elsewhere specified.</i>		<i>Quantity. cwts.</i>	<i>Value. £</i>
Exports 1933	. . .	1,322,140	299,849
„ 1932	. . .	1,367,977	332,269

representing a decrease of 45,837 cwts. or 3·3 per cent. in quantity and £32,420 or 9·7 per cent. in value.

This section of the pottery trade supplies refractory materials used in industry generally, and is still severely affected by the general world trade depression, and consequent slackening in the demand for its products.

The following table deals with the various export markets for the year 1933 with comparative figures for the year 1932:—

Market.	Value of Exports.		Inc. or Dec.		Inc. or Dec. per cent. over 1932.	
	1933.	1932.	Inc.	Dec.	Inc.	Dec.
	£	£	£	£		
Canada	518,931	605,334		86,407		14.3
Australia	273,557	234,219	39,338		16.8	-
Irish Free State	267,800	282,162		14,362		5.1
United States	245,036	261,112		16,406		6.3
South Africa	178,271	146,143		3,172		4.1
Argentina	154,017	125,990	28,027	-	22.2	-
Brazil	128,787	40,572	48,215	-	60.0	-
India	121,316	143,215		21,899		15.3
New Zealand	103,919	125,268		21,349	-	17.0
France	22,782	29,213	-	6,431		22.0
Other countries not separately specified.	870,591	880,141		9,550		1.1
Total	2,885,007	2,954,006		68,999		2.3

The exports to Canada and the United States again show decreased values. In 1929, before the general depression in trade commenced, the values of the exports to these two markets were:—

	£
Canada	948,651
United States	833,339

Australia again for the last year shows an increase of 16.8 per cent. compared with 1932. Here again, however, the trade remains far below normal, the value of pottery exports to that market in 1929 being £798,283.

New Zealand shows a further decrease of 17 per cent. for 1933, and there are, at present, no signs of recovery in this market. Exports of pottery to New Zealand in 1929 were valued at £370,810.

Apart from the satisfactory increases shown for Argentina and Brazil the other markets enumerated do not call for any special comment.

GLASS AND GLASSWARE.

The value of the exports of glass and glassware during 1933 show little variation when compared with

1932, but was substantially below that for the preceding years, as will be seen from the following figures:—

	£
Total value of all glassware exports 1933 .	1,263,435
" " " " " " 1932 .	1,265,642
" " " " " " 1931 .	1,367,171
" " " " " " 1930 .	1,854,615
" " " " " " 1929 .	2,268,169

the decrease in 1933, compared with 1932 being £2,207 or 0·2 per cent.

Following are details of the value of exports in 1933, with comparative figures for 1932, for each section of the industry:—

Section	Value of Exports.		Inc. or Dec.		Inc. or Dec. per cent. over 1932.	
	1933. £	1932. £	Inc. £	Dec. £	Inc.	Dec.
Glass, bottles and jars	246,770	269,829	—	23,059	—	8·5
Plate and sheet glass	669,572	679,285	—	9,713	—	1·4
Domestic machinery and illuminating glassware.	222,070	190,118	31,952	—	16·8	—
Scientific including glass tubing and glass rod.	77,179	87,628	—	10,444	—	11·9
Other types . . .	47,844	88,787	9,057	—	23·3	—
Total . . .	1,263,435	1,265,642	—	2,207	—	0·2

Detailed information is not at present available in regard to the various overseas markets to which exports of glass and glassware were made in 1933.

CINEMATOGRAPH FILMS.

United Kingdom films are steadily gaining recognition in all parts of the world. During the last four years English studios have pursued the wise policy of putting quality first and awaiting the moment when the general demand for their productions would justify an increase in the quantity of films to be made. It would seem as if this moment has now come, to judge by the programmes of the various studios for the next few months.

In one studio alone no less than seven films were being made in the month of December, and many others had been planned. Some of these films are being produced on a most lavish scale. The best directors, cameramen, writers and artists are engaged regardless of cost, and no pains are spared in the perfection of

details. The films include spectacular and historical drama, musical comedies, films of travel, cartoons with sound accompaniment, and even "Wild West" drama, of which Hollywood has hitherto had the monopoly. There is one film in preparation which promises to be not only an artistic triumph but of great general interest, and this is called "Man of Aran". It deals with the lives of the simple folk who inhabit the Aran Islands off the Irish Coast, and gain a livelihood by fishing. There is in this film a background of strange, wild beauty which could not be imagined by anyone who had not visited the islands.

AVIATION.

SPEED IN AIR TRANSPORT.

Five years ago the standard cruising speed of air transport 'planes the world over was around a hundred miles an hour. Time-tables everywhere were based on that level; possible routes were considered from the view point whether or not such a cruising speed made operation economical or feasible. Transport experts predicted a fairly slow rise in cruising speeds to the neighbourhood of 120 m.p.h.

The technical advance of the past few years has falsified all expectations. Design and production of improved and more powerful engines, the use of under-carriages that lift within the wings or engine nacelles when the craft is in flight and thus reduce air resistance, attention to the streamlining of every external part, and adoption of more efficient wing sections have sent cruising speeds rocketing up to 180 m.p.h. Including all stops, certain services in Europe and the United States are operating on a scheduled average speed of 150/160 m.p.h.

Speed, like other desirable attributes of the flying machine, can be secured to the greatest possible extent only by sacrificing a proportion of some other quality. Real aerodynamic improvements in the design of an aeroplane, which may be understood to mean improvements that give increased efficiency without extra cost or loss of pay-load, account for some of the increase to be recorded in cruising speeds. Much of it, however, has been gained by cutting down pay-load and by boosting engine power. In the upshot, power expended for each

unit of weight transported has gone up in a bigger proportion than cruising speed.

British aircraft constructors have been criticised of recent months because they were apparently making little effort in the design and production of fast commercial aircraft. The achievements of the air transport companies that operate inside the United States, with their 140/160 m.p.h. schedules, were the subject of deserved admiration and the British Empire services run by Imperial Airways the object of too hasty abuse. Critics overlooked one important difference between the American internal, and the British Empire lines; the former operate over one homogeneous country under one governmental control and are extremely well-equipped with radio and light beacons and the other ground paraphernalia needed in efficient air-line operation; the latter straggle nearly half across the world, passing over a diversity of lands and a wide range of climatic and topographical conditions. Imperial Airways services may more fairly be compared with the services operated outside the United States by Pan-American Airways. If this second comparison be made, it will be found that the speeds attained by the Pan-American 'planes are about the same as those of the slower craft in the present Imperial fleet and that the Imperial Airways time-tables, distance for distance, show considerably quicker travel.

Nevertheless, there is a powerful case for a substantial increase in the cruising speed of British transport 'planes. But increased speed must not go with undue loss of pay-load, lack of economy in operation, the "brute force" remedy of excessive horsepower, potentially dangerous increase of landing speed, or reduction of safety. And the British aircraft constructor, aided by the realization by Imperial Airways that over important sections of the Empire routes cruising speeds must be increased, is now meeting the demand for speed without sacrificing any of the other qualities that have earned the British airways a high reputation for safety, regularity and comfort.

The first big upward step from the 100 m.p.h. level was made in the acquisition of a fleet of eight Armstrong Whitworth four-engined monoplanes, which is now in service over the southern sections of the Cairo-Cape Town line and between Karachi and Singapore. These machines cruise normally at 120/125 m.p.h.;

their adoption has been an important factor in making possible a cut of one day in the time for the journey from London to South Africa.

Within the past few months Imperial Airways have placed orders for smaller, but considerably faster, aeroplanes. Two of them are smaller versions of the Boulton-Paul mailplane, which attained in trial flights a maximum speed of 197 miles an hour; they are expected to cruise at about 150 m.p.h. Another contract has produced the new four-engined de Havilland D.H. 86, a biplane of great beauty and efficiency that marks a step in advance of any comparable machine built anywhere in the world.

The D.H. 86 began to take shape on the drawing board about the middle of September last year. Sixteen weeks later the machine was going through flying trials, an achievement in design and production that is believed to be unprecedented in the air liner class. It derives power from four of the new "Gipsy-Six." 184/205 h.p. air-cooled inverted six-cylinder motors. Its normal load will be ten passengers, a crew of two, mails, luggage and fuel for several hundred miles' flying. Its cruising speed is considerably more than 140 miles an hour.

The maximum power provided is 816 h.p. Modern United States twin-engined aeroplanes, designed to carry perhaps 25 per cent. more load than the D. H. 86, cruise "economically" at about the same speed and employ between 1,500 and 1,600 h.p. Further, their motors are supercharged, implying heavier fuel consumption per unit of cylindrical capacity. They have not the safety margin gained by a four-engine power installation; the D.H. 86 can climb on the power of any three engines with full load on board, to a height which is near the full power "ceiling" of many types of civil aeroplane. And the new British craft lands more slowly than the American.

Technically, the D.H. 86 is of outstanding interest. Its biplane wings are of extremely high "aspect ratio" (proportion of wing-span to mean chord, or depth of wing from front to back) and the wings taper from root to tip. Bracing struts and wires are reduced to the minimum, and not a single excrescence breaks the smoothness of the wings, fuselage, undercarriage fairings and engine nacelles. Each component part merges harmoniously into the lines of the machine, thus reducing "inter-

ference", by which name the technicians know the in-harmonious joinings of component parts that sets up big air turbulences and cuts down flying efficiency.

The cabin is spacious, well illuminated, comfortable and quiet. In these respects, the craft is a replica in miniature of the large Imperial Airways 'planes that are admittedly the world's most comfortable air liners. Because it is much smaller and employs little more than one-third of the power it is less expensive to operate, and well suited to the running of services over routes where the available traffic does not justify the employment of the bigger machines. It is perhaps something more than coincidence that such a craft should materialize at a time when the completion of the England-Australia airway, by the opening of the remaining section from Singapore to Port Darwin, is under consideration.

CATALOGUE LIBRARY.

The undermentioned catalogues relating to United Kingdom manufacturers have recently been received and may be consulted by *bonâ fide* firms or individuals at the Office of His Majesty's Senior Trade Commissioner in India, Fairlie House, Fairlie Place, Calcutta.

<i>Names and addresses.</i>	<i>Description.</i>
Pancreol, Ltd., Marfleet, Hull.	"Pancreol" Products for Leather Manufacturers.
Rowntree & Co., Ltd., York.	Cocoa, Chocolate and Confectionery.
Baird & Tatlock (London), Ltd., 14-17, Cross Street, Hatton Gardens, London, E.C. 1.	Surgical and Scientific Instruments; Laboratory Apparatus.
* J. F. MacFarlan Co., 109, Abbeyhill, Edinburgh, 32, Bethnal Green Road, London, E. 1.	Opioidine-Preparation of Alkaloids of Opium.
The Steel Scaffolding Co., Ltd., Imperial House, 80, Regent St., London, W. 1.	Steel Tubular Scaffolding.
The Central Information Bureau, for Educational Films, 103, Kingways, London, W.C. 2.	Instructional and Educational Films.

*The catalogue marked with an asterisk has also been received in the office of His Majesty's Trade Commissioner, 3, Wittet Road, Ballard Estate, Bombay, where it may also be consulted by *bonâ fide* firms or individuals.

In addition, His Majesty's Trade Commissioner, Bombay, has recently received the undermentioned catalogues:—

<i>Names and addresses.</i>	<i>Description.</i>
James Arnott & Sons, Ltd., Arnoco House, Quayside, Newcastle-on-Tyne.	Lubricants.
British Klemm Aeroplane Co., Ltd., Hanworth Aerodrome, Victoria Road, Feltham, Middlesex.	Aeroplanes.
Dewrance & Co., Great Dover Street, London, S.E. 1.	Patent Valves and Boiler Mountings.
John Haig & Co., Ltd., Mar- kinch, Scotland.	Whisky.
Holland & Holland, Ltd., 98, New Bond Street, London, W. 1.	Guns and Rifles.

TRADE ENQUIRIES.

The names of the United Kingdom firms referred to in the enquiries mentioned below will be furnished to reputable firms on application to His Majesty's Senior Trade Commissioner, Post Box No. 683, Fairlie House, Fairlie Place, Calcutta.

No. 140-34.

A United Kingdom firm manufacturing Printing Inks and Varnishes is desirous of appointing a European House in Calcutta as agents for its manufactures, in connection with Government contracts only, on a commission basis.

No. 183-34.

A United Kingdom manufacturer of All-wave Superheat Wireless Receivers is desirous of appointing an Agent in India to undertake their sale.

H. M. TRADE COMMISSIONERS IN INDIA.

Calcutta—

Sir Thomas M. Ainscough, C.B.E.,
*His Majesty's Senior Trade Commissioner in
India and Ceylon.*

Mr. R. B. Willmot,
His Majesty's Trade Commissioner at Calcutta.
Post Box No. 683, Fairlie House, Fairlie Place.
Telegraphic Address.—"Tradcom, Calcutta."
Telephone No.—"Calcutta 1042."

Bombay—

Mr. W. D. M. Clarke,
His Majesty's Trade Commissioner at Bombay.
Post Box No. 815, 3, Wittet Road, Ballard
Estate.
Telegraphic Address.—"Tradcom, Bombay."
Telephone No.—"Bombay 23025."

Ceylon—

Imperial Trade Correspondent,
The Principal Collector of Customs, Colombo.

With Compliments.

MARCH



1934

The **Commercial Bulletin**

*A Monthly Review of Official and other
announcements relating particularly
to British Export Trade*

Issued by
**HIS MAJESTY'S SENIOR TRADE COMMISSIONER
IN INDIA AND CEYLON.**

**FAIRLIE HOUSE,
FAIRLIE PLACE,
CALCUTTA.**

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GENERAL.

The official returns for January supply evidence of the continuance of the recovery in trade, exports of United Kingdom goods rising by £2,403,961, as compared with January, 1933, and showing an increase of £1,179,819 over the total for December.

Imports were £1,510,238 above the December figures and were £10,761,876 higher than those of January, 1933. An encouraging feature of the import figures is that raw materials are responsible for £6,292,275 of the increase.

The returns for the month are presented in a new form, additional details relating to trade with the Empire being given, while imports from and exports to different parts of the Empire are shown separately instead of being grouped.

As an instance, in the tables for grain and flour under the old returns the number of countries mentioned did not exceed seven; under the new form there are specifically mentioned seven Empire countries and 15 foreign countries. The smaller quantities are grouped under "Other British countries," and "Other foreign countries" instead of under "Other countries".

As regards the general figures, the imports and exports for the month compare as follows:—

	<i>January, 1934.</i>	<i>Inc. (+) or dec. (—) on Jan., 1933.</i>	<i>Inc (+) or dec. (—) on Dec., 1933.</i>
	£	£	£
Imports	64,671,822	+ 10,761,876	+ 1,510,238
Exports	31,609,388	+ 2,403,961	+ 1,179,819
Re-exports	4,073,081	— 116,037	+ 30,546

Of the £2,403,961 increase in exports, manufactured goods accounted for over £2,000,000. Some of the outstanding gains in this section are:—

	<i>January Exports.</i>	<i>Gain on Jan. 1933.</i>
	£	£
Machinery	2,516,100	552,826
Woollen and worsted yarns	2,658,723	573,022
Vehicles	2,107,423	472,391
Non-ferrous metals and manufactures	808,281	226,675
Iron and steel goods	2,481,044	205,975

Exports of cotton yarns and manufactures declined £200,974 to £5,088,913, but "other textile materials" rose £180,786 to £1,221,204.

Shipments of coal fell £172,483 at £2,439,011, the quantity being 3,010,711 tons, against 3,217,275 tons in January, 1933.

The outstanding advances in the imports of raw materials as compared with the previous January are as follows:—

	£
Wool, raw and waste, and woollen rags	2,879,188
Wood and timber	911,409
Raw cotton and cotton waste	520,117
Hides and skins, undressed	487,402
Non-ferrous ores	356,299

Additional factors are present which encourage the hope that the improvement in trade will be maintained, of which one of the most significant is the steady increase in the receipts of the four main line railways. In each week of the current year a substantial gain has been recorded, the total increase in the first seven weeks of the year being £1,200,000, equivalent to approximately 6½ per cent.

FINANCE.

BRITISH FINANCE AND COMMERCE.

(By a Special Correspondent.)

Recovery in industry takes place in a certain well-defined order, it being necessary that certain industries of a basic nature should become active before secondary industries can commence to function normally. This is the case with engineering which requires the prior activity of the iron and steel industry. Great Britain last year (and especially during the latter months of the year) witnessed a considerable improvement in the fortunes of the iron and steel trade. Engineering in Great Britain, though also showing signs of recovery, has somewhat lagged in the general advance towards prosperity that was the characteristic feature of 1933. Happily the closing months of the year were brightened by signs which augur well for 1934, and there is now a general tendency to regard the outlook for British engineering in the present year as definitely hopeful. A summary

of salient features in the chief branches of the industry in the past year will be attempted here.

Engineering activities may be conveniently dealt with by grouping industries under what are known as the "prime movers"—namely, steam, petrol and electricity. It is in the newer industries which employ electricity and the internal combustion engine that the greatest activities have taken place in recent years. But Britain's engineering pre-eminence, which was built up on steam still stands in the older divisions of the industry, such as locomotives and steamships, though even here the motor-ship and the electric or diesel-driven locomotive are invading wider and wider spheres. It is significant of the changed emphasis in prime movers that the aeroplane building industry, which has never known steam, was probably the most prosperous among the engineering industries in proportion to its size.

In the shipbuilding industry last year the output of ships from British yards in 1933 was small, being, indeed, only about a fifteenth of the 1929 and 1930 outputs, but similar depressed conditions ruled throughout the world. Whether the output of any of these post-war years be large or small that of the British yards exceeds that for any other nation. The depressed state of shipbuilding is due to the low level of freights in recent years, and British shipbuilders have now directed their attention to the question of bringing down the cost of operation. The relative enforced idleness of last year in the shipyards has been profitably employed by extensive research in this direction.

With regard to locomotives it must be remembered that the four railway systems of Great Britain to an overwhelming extent build their own engines. The improved receipts for traffic last year will result in constructions in 1934, but in 1933 the building of locomotives for the home railways was at a rather low ebb. Orders for overseas also were not plentiful, but some firms were kept moderately busy.

In motor production last year it is interesting to note that despite the additional revenue duties levied on commercial vehicles there were practically no signs of any falling-off of the efforts of British motor manufacturers to effect still further improvements on their products. The general tendency has been to concentrate upon the manufacture of vehicles of from one to three tons. Further advance has been made during 1933 in adapting

heavy oil engines to motor traffic. Overseas trade grew apace and British cars and trucks of standard make are now to be seen in every quarter of the world.

Closely allied to the motor industry is that of aircraft, the latest to which the principles of the internal combustion engine has been applied. British aircraft engines are famous throughout the world, the names, to mention a few at random, of Rolls-Royce, Napier, de Havilland, and Armstrong-Siddeley, being almost household-words in aircraft manufacturing and operating circles. Last year saw many advances in the more spectacular achievements of "records," but accompanying them was a steady improvement in design of both aircraft and engines. Many British aircraft were sold abroad, and altogether 1933 was one of activity and prosperity in this newest of British engineering industries.

In the British electrical industry the past year has been characterized by two events of paramount importance. These are, first, the completion of the "National Grid," i.e., the linking-up of all the power-stations of the country, and a strong turn in the tide of the industry. The last few weeks of the year, in particular, were marked by a notable increase in the demand for many of the products of the electrical manufacturing industry while the consumption of electrical power and light reached a new high record. Bound up with the industry is the cable industry and the technical advance made in this branch during the last few years was continued during the past twelve-month. The industry is in a strong position to take advantage of the increasing "electrical-mindedness" of the world. Gas engineering is by no means moribund in Great Britain and further steps were taken last year towards the establishment of what may be termed a "gas-grid" in certain industrial districts.

The foregoing branches of the British engineering industry have all dealt with transport or the transmission of power. It remains to record that the machines which the engineer uses to make machines, in other words, machine tools have been the subject of much research and development in 1933. The ever increasing number of alloys used in modern industry has called for greater adaptability in the machine tools which have to handle them. Such machines are now run at very high speed. Certain lathes are now run at the, formerly, astonishing speed of 4,000 revolutions per minute. All

classes of metals and their alloy are now handled (cut, planed, drilled, etc.) at such speeds and with such accuracy that constructional engineers have no reasonable cause to complain that they are not well served by their machine-tool colleagues.

NEW COMPANIES.

A new Mining Company.—A company was registered on 2nd February to take over, under the reconstruction scheme approved on 29th January, the assets and undischarged liabilities of the Anglo-Nigerian Corporation, Ltd. The company will be known as Gold and Base Metal Mines of Nigeria, Ltd., and the nominal capital is £600,000 in 2s. 6d. shares.

Rubber Powder Co., Ltd. has been registered as a public company to acquire patents relating to the obtaining of rubber in granulate form from dispersions such as latex, the manufacture of rubber sheet by atomizing and drying latex, and the manufacture of rubber sole crêpe by atomizing, drying and pressing latex, etc. The nominal capital of the company is £30,000.

Stove Makers' Fusion.—A public company under the title "Aga Heat" Ltd. was registered on 26th January with a nominal capital of £175,000 in 5s. shares. The company has been formed to acquire the business carried on by Bell's Heat Appliances at 157, Queen Victoria Street, E.C. 4, and Agabell Works, Slough, in stoves, heaters and other appliances and a similar business carried on by B.H.A. Productions at Smethwick, and to adopt an agreement with Svenska A/B Gasaceumulator of Lidingo, Stockholm. The directors are: John E. B. Jobson [chairman of Qualecast and director of Peacocks (Stores) Supplies]; Thomas G. Bedwell (managing director of Bell's Asbestos and Engineering and director of other companies); John T. Brockhouse (director of Bell's Appliances); Captain Rolf M. Von Heidenstam, Djurgarden, Stockholm (director of Svenska Gasaceumulator); Walter T. Wren, sales manager. The registered office of the company is at 157, Queen Victoria Street, E.C. 4.

AIRCRAFT MERGER.

The Hawker Aircraft Co. has acquired a controlling interest in the Gloster Aircraft Co. The two concerns will, however, continue to operate as separate entities.

INCREASES IN CAPITAL.

	£
Ayrton Cohen & Co., Ltd. (non-ferrous metals)	45,000
Summerlee Iron Company, Ltd., Edinburgh (simultaneous reduction and increase)	888,750
The Asiatic Petroleum Company, Ltd.	12,073,760
Fisher & Ludlow, Ltd. (Press Stampings)	200,000
Fison, Packard & Prentice, Ltd. (Fertiliser Manufacturers)	48,000
Wondewood, Ltd. (Rubber Manufacturers)	47,000
British Industrial Gases, Ltd.	115,000
East London Rubber Co., Ltd.	499,000
E. K. Cole, Ltd. (Radio)	100,000
The Malkin Tiles (Burslem), Ltd.	40,000

CONTRACTS SECURED.

Bulgarian Silver Coinage.—The Royal Mint has secured the contract for the minting of 5½ millions of silver coins for the Bulgarian Government. The amount involved in this contract is understood to be £134,000.

Motor Cycles for Australian Police.—An order has been placed by the Victoria Police Department for the supply of 23 motor cycles, of United Kingdom manufacture.

Alcohol Factory for China.—An order for the erection of an alcohol factory in China has been placed with Messrs. Blair, Campbell and McLean, Ltd., a subsidiary of Blairs, Ltd. The order is estimated to be worth approximately £100,000.

Lisbon Water Supply.—The Stanton Ironworks Company have secured a contract for the supply of 1,000 tons of 12-inch cast iron pipes and valves, the value of the contract being about £6,000. The pipes are required for the supply of water to Oeiras, a village just outside the Lisbon boundary.

Big Radio orders for Britain.—The Roumanian Broadcasting Co. have placed an important order with the Marconi Co. for the supply of two broadcasting stations. One will be of the "super power" variety, with an aerial energy of 150 kilowatts working on 1,875 metres. The other will be a transmitter of 20 kilowatts aerial power. This order closely follows that given by the

Swedish Government to the Marconi Co. for a 150 kilowatt station for Motala.

Razor Blades Contract for the Army.—Messrs. Thomas Ward and Sons, Ltd., of Wardon Works, Sheffield, have secured two large contracts to supply razors and razor blades to the British Army and to the Irish Free State Army. In the case of the Irish contract the firm had to face keen competition from the Continent.

Lithuanian Stamp Contract for Britain.—The contract for the engraving and printing of the postage and air mail stamps for Lithuania has been secured by Messrs. Bradbury, Wilkinson and Co., Ltd. The postage stamps will bear the portrait of the President, M. Smetona, and the air mail stamps, which will be of six different designs, will be in commemoration of the Lithuanian airmen, Gienas and Darius, who lost their lives in an attempt to fly from New York to Kaunas.

Locomotive Boilers for Argentina.—Messrs. Armstrong, Whitworth & Co. have received an order from Buenos Aires for four locomotive boilers.

Polish Contract for British Firm.—It is understood that an agreement has been reached between the Polish Ministry of Communications and the Westinghouse Brake and Saxby Signal Co., Ltd., of London, for financing the manufacture and installation of brakes and braking equipment for the Polish railways. The contract is for 130,000,000 zloty (over £4,000,000 at present rates of exchange) and it is stated that 60 per cent. of the amount will be used for the manufacture in Poland of the necessary equipment over a period of five or six years. It is expected that the balance of 40 per cent. will be expended in the United Kingdom.

Durban order for Buses.—Twenty-two motor buses of United Kingdom manufacture, to cost approximately £50,000 have been ordered by the Durban Corporation to replace rail trams. The contract has been divided between the Sunbeam Motor Car Company, Ltd., Wolverhampton, and Leyland Motors (S.A.) each of which will supply eleven 55-seater buses. Leyland Motors (S.A.) is controlled by Leyland Motors, Ltd., Kingston-on-Thames.

Tanker order from United States of America.—The Furness Shipbuilding Co., Haverton Hill-on-Tees, has received an order for a 5,000 ton oil-tanker for the Standard Shipping Co. of New York.

The Metropolitan-Vickers Electrical Co. have received an order for mining plant to the value of £100,000 from the Anglo-Transvaal Consolidated Investment Co.

Railway Lamp Contract.—The Great Northern Railway Co. (Ireland), Dublin, has placed with the Metropolitan-Vickers Electrical Co., Belfast, a contract for the supply of "Cosmos" electric lamps for a period of 12 months.

The Union-Castle Line to South Africa.—Messrs. Harland & Wolff, Ltd., have received orders for two twin-screw motor passenger vessels similar to the 20,000 ton *Warwick Castle* for the South Africa mail service. In addition two medium sized motor cargo vessels have been ordered with insulated cargo space specially constructed for the carriage of fruit from South Africa.

Egyptian State Railways, Telegraphs and Telephones Administration has placed an order with Messrs. Champion Druce & Co., Ltd., for the supply of white lead paste to the value of £1,200.

Durham Coal for Sweden.—Gothenburg Gas Works have bought 37,000 tons of Durham gas and coking coals for delivery over the second half of the year.

THE IRON AND STEEL INDUSTRY IN THE UNITED KINGDOM.

Generally speaking, the improvement which was recorded in the position of the iron and steel industry in the United Kingdom last year has so far been maintained during the current year. Active conditions continue to obtain in the iron and steel market as a whole and the volume of domestic demand, which is the main support of the industry, is increasing, although temporary lulls have occurred in some departments as was only to be expected in view of the large buying movement of the past few months, and the extent to which consumers in many cases have covered their requirements for some time ahead.

The domestic demand for pig iron continues to be brisk and, in some cases, has exceeded the supply. Producers are in a strong position and are increasing output in order to cope with the expansion in demand. Domestic prices of all grades of English foundry and

large pig iron, and also of East and West Coast hematite, have been raised by 5s. per ton: in the case of Cleveland pig iron this represents the first general advance since January of last year. It is generally admitted that the higher price does no more than cover the higher cost of ore and coke. The whole of the output of pig iron is passing into consumption, and the disposal of the production for the next two or three months at least is assured.

During January four additional furnaces were put into blast, the number blowing at the end of the month being 85 compared with 62 at the end of January, 1933. Additional furnaces have also been blown in during February.

The total output of pig iron increased from 409,300 tons in December to 441,300 tons in January, compared with 286,600 tons in January last year. Pig iron production in January was the highest registered since July, 1930.

The total production of steel ingots and castings in January was 711,000 tons, against 668,900 tons in December and 444,400 tons in January, 1933. Steel output in January was the highest since March, 1930.

As already indicated, the continued expansion in iron and steel output is attributable entirely to the increased demand from the domestic steel-consuming trades. In this connection a particularly welcome feature is the improvement during recent months in the British ship-building position, reflecting the improvement in general economic conditions. The recent expansion in mercantile and naval orders has provided much needed work for British shipyards, and a corresponding increase in the demand for steel. It is true that the improvement is only of modest dimensions, and that the situation is still highly unsatisfactory, but the outlook at the present time is more encouraging than for a considerable period. The better position to-day in the shipping industry, as compared with 12 months ago, is illustrated by the Chamber of Shipping figures of idle tonnage, which at the beginning of the current year amounted to 1,240,000 net tons, compared with 1,970,000 net tons at the beginning of 1933.

The steel industry has also received rather more orders from the structural engineering trades and from the railways. Makers of stainless steels of various kinds

are busily occupied and are increasing output, which is readily taken up. The tinplate market has developed a somewhat more favourable tone and sales have increased. Foreign inquiries are more numerous and domestic demand is improving. Competition in export markets from foreign makers continues to be keen and shows no sign of abating. The galvanised sheet market continues dull.

In practically all departments there is considerable room for further improvement, particularly in export demand. Having regard to the numerous barriers at present obstructing the development of international trade in general, it is not surprising that the exports of iron and steel continue at a depressed level. In addition to such factors as excessive tariffs and stringent import quota systems, the restrictions on foreign exchange dealings which are in force in so many countries render export trade exceedingly difficult.

The total exports of iron and steel in January amounted to 163,700 tons, which, although less than in December (173,100 tons), were appreciably higher than in January, 1933, when they totalled 148,700 tons. Inquiries from certain overseas markets have recently been more numerous, but, up to the present, they have not resulted in any appreciable increase in the volume of actual business transacted.

The active domestic demand in the United Kingdom was reflected in the increase in iron and steel imports in January, when they amounted to 119,800 tons against 91,300 tons in December, and 69,500 tons in January of last year.

The import figures also reflect the strenuous efforts being made by the international steel cartel to improve and consolidate its position in the United Kingdom market. In its endeavours to achieve this end the cartel is deliberately pursuing a price differential policy, as a result of which there is a wide margin between the prices quoted by the cartel in other markets and those quoted in the United Kingdom. Buyers of merchant bars for the United Kingdom, for example, are quoted a price by the cartel of 57s. 6d. per ton (gold f.o.b. Antwerp), while the official basis price for other markets is 65s. per ton.

In addition to quoting a lower basis price for the United Kingdom market the cartel is also bearing part

of the depreciation of sterling, so as to keep its prices in the United Kingdom as low as possible. The cartel's present conversion rate between paper and gold pounds, to be used in quoting export prices, is 1.55 in the case of orders from the United Kingdom, and 1.625 in the case of other markets.

Reorganisation Scheme.—A Special General Meeting of the National Federation of Iron and Steel Manufacturers, held in London on 22nd February, agreed in principle to the general terms of the scheme for the revision of the Constitution and the extension of the functions of the Federation. A small revising committee was appointed to take into consideration amendments which had been and which may be received, and to prepare a draft Constitution of the Federation in final legal form to be submitted for acceptance to another Special General Meeting of the Federation to be convened on 19th April next.

NON-FERROUS METALS.

NEW COPPER ALLOYS.

BIRMINGHAM NON-FERROUS METALS DISCOVERY.

Kunial is the name which has been given to a series of new copper alloys discovered in the laboratories of I. C. I. Metals, Ltd.

The remarkable feature of these new alloys is, that by simple heat-treatment, *their hardness, strength, and other mechanical properties can be very considerably improved.*

The discovery of a new alloy with properties of outstanding interest is in itself a rare but important event. *The importance of the present discovery is that it concerns not merely one alloy alone, but a whole new series of alloys.*

The Kunial series covers Kunial Brass, Kunial Copper, Kunial Nickel Silver and Kunial Bronze. All the commonly used copper alloys are annealed and softened by raising them to temperatures in the region of 400° to 600° C. It is therefore astounding to know that similar heat-treatment may treble the hardness and double the tensile strength of the Kunial alloys. The difference between them and ordinary copper alloys becomes there-

by immediately apparent. Yet in spite of this marked difference, Kunial alloys can be extruded, rolled, drawn and cold worked exactly in the same way as ordinary brass, for the production of rod, wire, tubes, strip and sheet.

Kunial brass, which is one of the most important of the series, is an alloy of copper and zinc, together with other added elements which impart to the metal its remarkable properties. The copper and zinc contents may be varied within wide limits thus modifying to some extent the basic properties of the alloy, but in all cases the unique property of hardening and strengthening by suitable heat-treatment is retained.

Uses of Kunial Brass.

Kunial brass is an ordinary commercial alloy, and although the raw materials entering into its composition are more expensive than those in ordinary brass, for products of equal strength, it may be possible to produce the finished article cheaper in Kunial than in ordinary brass.

Further, the finished Kunial products will be of a hardness and strength considerably greater than those obtainable in ordinary brass. Kunial brass is so entirely different from ordinary brass in certain of its properties that time and experience alone will decide the directions in which it will find its most useful applications. It is not difficult, however, to foresee that a wide range of products having improved mechanical properties can be made from it. A few examples that readily come to mind are products such as nuts, bolts, fuse bodies, primers, nipples, valves, etc., which can be machined from soft or work-hardened Kunial brass rod and subsequently hardened by heat-treatment. Products made from soft or work-hardened Kunial brass wire, such as spiral springs and wire gauze, can be subsequently hardened and strengthened by simply heating to a suitable temperature. Articles stamped from strip and sheet, such as latch keys, clock wheels, watch cases, coins, pen nibs, etc., can by the use of Kunial brass be finally hardened by merely heating. The use of Kunial brass also permits of very hard and strong products being made in the form of hot stampings or castings.

In short, finished products can be made in Kunial brass so as to possess properties hitherto unobtainable in

an ordinary copper alloy; while its use permits of modifications in design which, although desired, have hitherto not been possible owing to the limitations of available materials.

Where it is desirable to use alloys, free from zinc, the Kunial alloys are extremely accommodating, as their remarkable properties are not dependent on the presence of zinc in the alloy. Instead of Kunial brass, one of the other Kunial alloys free from zinc might be used with advantage.

There are some applications in which it may be desired to embody the remarkable properties of Kunial brass in a whiter alloy and there is no difficulty in changing the colour of the alloy to suit this requirement, and a Kunial nickel silver may be used which, although indistinguishable in appearance from ordinary nickel silver, possesses all the remarkable properties of other Kunial alloys.

All the Kunial alloys possess a high resistance to corrosion by sea water.

COLOURED ALUMINIUM.

A NEW DEVELOPMENT IN METAL FINISHING.

For the first time in history, samples of dyed metal were shown at the 1934 British Industries Fair. The metal treated was aluminium, and strips of it dyed in a variety of colours and effects were exhibited on the Dye-stuffs Stand of Imperial Chemical Industries, Ltd., at Olympia. This development, which has been made possible by a process of proved commercial success, is of great interest owing to the fact that metal has hitherto proved the only material in common use which has resisted all efforts of the dyer. Under the new Gower process, which is operated in the United Kingdom by Messrs. Alumilite, The Thames Factory, Rainville Road, Hammersmith, aluminium may be permanently dyed in almost any shade or colour.

The actual process is one of extreme simplicity, and is rendered possible by the special properties which aluminium possesses as a metal. Aluminium exposed to the atmosphere under normal conditions forms a transparent superficial film of oxide, which once formed acts as an efficient sealing agent against further oxidation, and which is of extreme hardness and remarkably resistant to abrasion. Besides having a protective effect, the

film is able to take up and permanently retain particles of colouring matter: certain aluminium compounds possess the property of taking up colloidal particles, which permits of their use as clarifying agents for water, or more particularly as mordants for dyestuffs. Oxide of aluminium has definite mordant properties, so that on simple oxidation the surface of the metal becomes automatically prepared for the dyeing process. The hardness, as well as the colour absorption properties, of aluminium oxide is well exemplified in certain precious stones and minerals; some of the most brilliantly coloured precious stones contain aluminium oxide in large quantity, and corundum, of which ruby and sapphire are coloured varieties, and which is one of the hardest substances known, is almost pure alumina.

The Gower Process.

The object of any process of preparing the surface of aluminium objects for dyeing must therefore be artificially to increase the degree of oxidation, for the permanence of the dyed surface and its hardness must depend principally on the depth of the oxide film. In the Gower process, this is effected by an electrolytic method. Only dilute sulphuric acid, out of the various acid baths tried, has been proved capable of treating any form of aluminium whether wrought, cast, or in the form of alloys, and of permitting absolute control of the surface films formed.

Polishing is essential before immersion in the electrolyte since any defect in the surface will be emphasised by the colour subsequently applied. After this treatment, the aluminium presents a silvery-white surface, and if it is now simply immersed for a few minutes in a bath containing an organic or a mineral colouring matter, it will take up the colour, just like wool or cotton.

The colour is made proof against abrasion by immersion in a "sealing-bath".

Range of Effects.

The colouring process enables deep penetration to be effected in a wide variety of colours, which may be either lustrous or matt. Most of the organic colouring matters, such as the anthraquinones and alizarines, may be used, and the finish is much more permanent than that given by lacquering or plating. The colour range extends from

jet black and cream to the most delicate pastel shades, and includes the metallic colours—gold, bronze, and copper. All such colours are remarkably sunfast, but where exceptional heat fastness is required, mineral colouring matters, such as Cobalt salts, are naturally called for. There has recently been developed a series of colour combinations which widely extend the field of application of the "Alumilite" process. This includes combinations such as black and green and gold, and many others, up to ten-colour combinations.

Possible Uses.

Pure aluminium, as well as all worked-up aluminium alloys (sheets, profiles, rods, tubes, wires) with copper content up to 9 per cent. and zinc content up to 14 per cent. can be subjected to treatment by the new process. The uses for coloured oxidised aluminium are seen to be infinite, especially where particular value is attached to freedom from rust and corrosion, durability of the colouring film, beauty and light weight. Motor-car parts, coach work, bicycles, door and window frames, railings, wireless apparatus, lighting fittings, furniture, kitchen utensils, thermos flasks and buttons, are among the variety of outlets which could undoubtedly be found for the metal.

THE AUTOMOBILE AND ALLIED TRADES.

THE RELIABILITY OF THE BRITISH MOTOR VEHICLE.

The reliability of British vehicles is constantly being proved in all parts of the world under all sorts of conditions, for such vehicles are providing economical and efficient transportation in a variety of ways and circumstances of remarkable performances of vehicles of United Kingdom manufacture.

A light car recently completed a record run across the Dominion of Canada, and a 1930 touring car of the same make has just completed a trans-African journey, striking north-westward from the Indian Ocean to the Atlantic at Larache in Morocco, en route for England. From Zomba, the Nyasaland capital, the journey was through Tanganyika, Kenya, and Uganda, through the Belgian Congo, French Equatorial Africa, and the

French Cameroons to Kano in Nigeria. Following the banks of the Niger, the party travelled northward, eventually setting out across the Sahara for the Grand Atlas Mountains of Morocco. The journey was made without mechanical trouble of any kind, an outstanding tribute to the dependability of the car.

A British oil-engined six-wheeled commercial vehicle and trailer has, since March 1933, been giving reliable service on a regular 600-mile cross-desert service between Damascus and Baghdad, rarely carrying less than seven tons on the vehicle and a further four tons on the trailer, and seldom operating on main roads. The vehicle has covered over 50,000 miles on this exceptional service, a performance which, considering the difficulty of obtaining clean fuel—one of the most important considerations in oil-engined vehicles—speaks well for the progress which has been made with the compression ignition engine, and to the reliability and construction of British vehicles.

Confidence in the motor vehicle as a dependable means of transport, even across vast tracts of undeveloped territory where failure might be disastrous, is increasing, and the British motor vehicle is constantly proving that it can be relied upon to afford economical and satisfactory transport under every possible condition.

A REMARKABLE TRANSPORT UNIT.

In the many parts of the world there are transport problems of incredible difficulty. There are places in which there are no roads, and others in which the roads are still mere surface tracks. For some time experiments have been made with different types of tractors and motor-cars, and many of them have resulted in the manufacture of vehicles of good utility in the districts for which they were designed. But one of the principal drawbacks has been that of working costs, which have often proved to be uneconomic. It is believed that the main problems have now been solved by a unit specially planned for the English Mechanical Transport Directing Committee.

This unit was first seen at the Aldershot Military Tattoo in 1932, and it consists of a tractor and two trailers. It was constructed to carry a heavy load on earth or lightly constructed roads, and thus serve in the development of great areas not served by railways.

Carrying its full load of 15 tons, it was run for 5,500 miles in England over unmetalled roads and country tracks. Then it was sent to the Gold Coast for exhaustive trials under actual working conditions in the tropics. It covered over 8,000 miles with remarkable success. The tests embraced almost every difficulty likely to be encountered by such a unit; it was run over very bad roads, hilly country, during the rainy season, and in conditions in which no ordinary lorry could be used. The net transport cost of the freight carried worked out at less than sixpence per ton mile, a figure which can be still further reduced by using a heavy oil instead of petrol. It is an ideal transport unit for difficult territories.

SHIPBUILDING.

The improved outlook in the shipbuilding industry is reflected in the statistics recently issued by Lloyd's Register of Shipping. Improvement began early last year, but for a time it was slow. As the year progressed the pace increased. At the beginning of 1933 the tonnage under construction in British yards was 225,497, it is now 331,541, an increase of 106,044 tons. In January, 1933, Great Britain's share of the world's total of tonnage under construction was 29.4 per cent; it is now 43.8 per cent.

This is a welcome proof of the steadily returning prosperity of British trade. It is also a witness to the enterprise and courage of British owners, who believe that trade is definitely on the mend and that they must be prepared to meet the requirements for more carrying capacity. Owners of coastal craft and trawlers have given orders for a large number of vessels. In this they have been influenced both by the improvement in trade, and by the stimulus given by the Government in their fiscal concession to the users of fuel oil in the coastal trade; and by the protection of the fisheries. One interesting feature of the statistics relates to the use of the internal combustion engine. Apparently British owners are not now so generally interested in the motor-vessel as are owners of other nationalities. For, of the 331,541 tons under construction in Great Britain and Ireland at the end of 1933, only 112,276 consisted of motor tonnage; while at the same date the motor tonnage being built abroad, at 305,978, was greater by 188,490 than that of the steam shipping.

TEXTILES.

COTTON.

During February raw cotton prices have risen fairly steadily—during the second week of the month they reached the highest level since August last—and there seems to be no likelihood of their weakening to any marked degree. Dealing in American cotton tends to be slowed down by the revaluation of the dollar and the natural uncertainty as to what effects this may have on international finance.

These factors all influence the yarn and cloth market. Business in yarns has been slow, but spinners have held to their raised prices rather than sell at a loss, although this means a reduction in turnover. A certain business has been done in coarse to medium counts of American yarns and some lots of the finer counts of Egyptian have been sold for India with somewhat larger weights for Germany.

The China market continues quiet. Java and the Straits are not much more active. Little demand is in evidence from the Near Eastern market, but Egypt is showing more interest than of late in bleaching and printing cloths.

South America has been steadily buying finishing cloths and prints and dyed goods. An irregular business is also being done with Switzerland and with Scandinavia.

The home and Dominion markets show the greatest activity—the home trade buying a variety of goods, while the heavier bleaching cloths and drills are in demand for South Africa, and both heavy and fancy goods for Australia.

Indian Cotton for Lancashire.

The Lancashire Indian Cotton Committee was enlarged on 5th February to include members representing other sections of the trade besides the spinning and manufacturing interests.

The Manchester Chamber of Commerce have now issued a second list of mills spinning Indian cotton, to

supplement the list published in December last year. This brings the known number up to 46.

An agreement is reported to have been reached over a scheme for direct trading between Indian cotton growers and consumers in Lancashire. A well known firm of Manchester brokers have undertaken the distribution of raw cotton to spinners, and the organisation of the export of cloths is to be under the supervision of the head of a Manchester firm of Indian shippers. It is announced that 1,800 bales have so far been shipped to Manchester under this scheme.

Exports of yarns and piece goods from the United Kingdom during January showed a welcome improvement over the preceding month, though the piece goods did not reach the figures for January, 1933.

The following table shows, with comparisons, the month's exports of the principal classes of cotton goods:—

	(000's omitted)		
	Jan.	Dec.	Jan.
	1934.	1933.	1933.
	lb.	lb.	lb.
Yarn, grey	11,212	9,652	9,176
Yarn, other	1,556	1,408	1,471
<i>Piece Goods.</i>	<i>sq. yd.</i>	<i>sq. yd.</i>	<i>sq. yd.</i>
Grey	38,175	29,621	36,058
Bleached	54,015	48,811	68,826
Printed	31,920	26,725	31,577
Piece-Dyed	46,962	43,052	50,640
Dyed in the yarn, or 'coloured'.	8,006	7,315	10,246
Total Piece Goods . .	179,078	155,524	197,347

WOOL.

A feature of the wool textile industry in the past year has been the manner in which the trade has absorbed the abnormal supplies of wool and the spectacular rise in wool prices from the very low values ruling in 1932. Wool combers and spinners have been especially well employed for the past few months involving overtime working and they still have orders in hand for some time ahead. Wool values at the beginning of this year were 60 per cent. dearer for merinos and 45-50 per cent. for crossbreds than twelve months

earlier. Stocks in the hands of spinners and manufacturers had fallen very low during the period of semi-normal activity and in the change over to almost full time capacity mills have been heavily restocked with raw material and semi-manufactures.

The slight check to prices which occurred during the January wool sales in London is the natural consequence of the big advance. This advance extended to tops and in a lesser degree to yarns, but it has not yet had the same influence in the piece goods section. Buyers of fabrics got in early enough to avoid the new price level, but the struggle to pass on the legitimate advance to fabrics must come. One result will no doubt be the substitution of cross-bred wool for merino owing to the necessity of making garments at a fixed price.

The home market for certain classes of yarns and fabrics previously imported from the Continent is now supplied by Yorkshire manufacturers.

In the export trade more semi-manufactures and piece goods were exported during 1933 than during the two previous years, which in view of the restrictions on trade and the financial and political chaos which afflicts so many countries is very gratifying. The improvement was maintained during January this year.

The export returns also show the growing importance of the Dominions as markets for woollen and worsted fabrics. The percentage of insured workers unemployed has been reduced from nearly twenty per cent. in 1932, to approximately nine per cent. at the end of last year. This present favourable position is no doubt due to the expanding use of wool commodities caused in the first instance by the extreme cheapness of the raw materials.

In the region of research much valuable work has been accomplished and wool fabrics can now be made unshrinkable; the irritation to the skin of wool underwear can be removed by chemical treatment; discolouration when laundered avoided and felting, mildew and destruction by moths prevented.

LINEN.

Business in the local flax markets of Northern Ireland is brisk. Supplies are good and meet with a keen demand. Prices are firm and show a tendency to rise.

especially in the case of the better grades. The average price is about 9s. per stone.

There is no marked activity in the yarn market. Exports of yarns for the month of January, 1934, were valued at £80,547. This shows a considerable advance in comparison with the returns of £50,422 and £56,043 for January, 1933 and 1932, and with £62,370, the monthly average for 1933.

In piece goods the exports for the month show an increase at £324,978. In January, 1933 and 1932, the exports were £285,944 and £267,341 respectively.

Exports of piece goods to the United States of America returned to a more satisfactory level after the setbacks of the previous few months. The returns are £128,881, £118,562, and £118,307 for January, 1934, 1933 and 1932, respectively. Australia and Canada maintain their position as the next most important markets for piece goods and took during the month more than the monthly average for last year. South Africa has doubled its imports of piece goods for the month, while Brazil, on the other hand, has taken only about half of its usual importation from the United Kingdom.

Exports of made-up goods still show no signs of recovery and exports of handkerchiefs in particular have fallen considerably. The following table shows the position:—

Exports of Made-up Goods of Linen.

	Jan. 1934.	Jan. 1933.	Jan. 1932.	Monthly average for 1933.
	£	£	£	£
Damask Table Linen .	52,000	43,137	50,060	53,500
Handkerchiefs . . .	15,560	20,406	20,516	26,762
All other manufactures of linen n.e.s.	15,971	33,982	12,795	60,750

Imports of linen goods into the United Kingdom during January were valued at £24,642 as compared with £22,302 and £20,488 in January, 1933 and 1932, respectively.

The total values of linen goods exported from the United Kingdom during January, 1934, 1933 and 1932, were respectively £493,414, £434,383 and £444,868.

The quantities of linen piece goods exported during the same period were respectively 6,772,000, 6,223,000 and 5,865,000 square yards.

POTTERY AND GLASSWARE

There is no change in conditions of any importance to record in the Pottery industry. The latest published unemployment returns show that at the end of January there were 13,513 workers registered as unemployed, though a large number of these were actually working short time. Compared with the corresponding period twelve months ago, the number of operatives out of work shows a reduction of 4,358.

An announcement which has given satisfaction is to the effect that the wages of approximately 70,000 pottery workers have been stabilised at the present rates for the next twelve months by an agreement which confirms the 1931 Arbitration award signed on behalf of the British Pottery Manufacturers Federation and the National Society of Pottery Workers.

Following are details of the exports of pottery for the month of January, 1934, with comparative figures for the corresponding month last year.

Class.	Value of Exports.		Inc. or Dec.		Inc. or Dec.	
	1934.	1933.	Inc.	Dec.	per cent.	Inc. Dec.
	£	£	£	£		
Tiles (all classes) . . .	17,724	13,256	4,468	—	33·8	—
Sanitary ware . . .	52,729	48,458	4,271	—	9·0	—
Chinaware . . .	13,017	13,464	—	447	—	3·3
Electrical ware . . .	6,656	5,389	1,267	—	23·5	—
Earthenware of all other descriptions.	107,986	104,852	3,134	—	3·0	—
Refractory goods not elsewhere specified.	18,091	16,169	1,922	—	11·9	—
All other descriptions	6,071	4,618	1,453	—	31·5	—
Total . . .	222,274	206,206	16,068	—	7·8	—

Following are details of the exports of glass and glassware for the month of January, 1934, with comparative figures for the corresponding month last year.

Class	Value of Exports.			Increase per cent. over 1933.
	Jan. 1934.	Jan. 1933.	Increase.	
	£	£	£	
Scientific glassware . . .	6,024	5,965	959	16·1
Domestic and fancy glassware.	12,036	10,906	1,130	10·4
Plate and sheet glass	64,517	55,641	8,876	16·0
Glass bottles and jars	18,728	19,262	534 (dec.)	2·7 (dec.)
All other kinds of glass and glassware.	7,759	6,183	1,576	25·5
Total . . .	109,964	97,957	12,007	12·3

AVIATION.

NEW FLYING BOATS FOR COASTAL DEFENCE.

Two new British military flying boats have begun flying trials at a time when the employment of marine aircraft in coastal defence is a subject exercising the minds of strategists in the United Kingdom and in Empire overseas. Both of the new machines appear to possess qualities which fit them admirably for this class of work, in addition to the open-sea reconnaissance duties that primarily governed their design. They are fast, sea-worthy and efficient, able to carry a big load in fuel and armament, and, therefore, to begin harassing attack on enemy warships at a considerable distance from the mainland.

The first combined sea and air exercise, held last September over the North sea, gave a broad hint of the potential value of flying boat squadrons.

Of the new machines, Messrs. Short Bros., known all over the world as makers of civilian and military air boats, are responsible for one, a monoplane craft with liquid-cooled motors; whilst the other, a biplane with air-cooled engines, has been produced by Messrs. Saunders-Roe, who are unrivalled in the construction of amphibious planes.

Although both types are designed to fill the requirements of the same specification and are capable of the same minimum performance, the two craft differ in nearly every detail. They are alike in possessing unusual lifting surfaces; the monoplane wings of the Short boat are shaped like the wings of a gull, with a pronounced upward sweep from their roots to a point about one-quarter of the way to the tips, and the wings of the Saunders-Roe biplane are actually sesquiplane, which means that the span of the upper wings is very much greater than that of the lower wings. Sesquiplane arrangement of wings was at one time fairly common, but it is rarely nowadays that upper and lower planes vary so much in span as in the new Saunders-Roe boat.

Fully laden, the new monoplane weighs about eight and a half tons. The hull is built of metal and has flat "tumble home" sides. The pilot sits in an enclosed cabin forward; in the extreme nose of the fuselage is a machine-gun emplacement. A second open cockpit is located aft of the wings and a third, fitted with a

machine-gun for defence against attack from the rear, in the tail. Details of equipment and performance may not yet be published, but experts will be surprised if the official trials do not reveal speed and general flying efficiency of an order that appeared to be far beyond the abilities of boat seaplanes only a few years ago. The two Rolls-Royce motors, experimental in type and cooled evaporatively, are mounted in nacelles at the point where the gull wings flatten out.

The chief advantage gained by the gull-wing arrangement is that the wings are raised well away from the water, keeping the airscrews and engines clear of spray in all but very heavy weather and minimizing the risk of waves washing right over the wing-tips. Seen head on, the craft is remarkably "clean", with scarcely a break in the smooth outline. She is evidently built for speed.

Two Bristol "Pegasus" IIM. 665/690 h.p. air-cooled radial motors provide power in the Saunders-Roe machine. They are carried in nacelles mounted on a level with the top wings—and are thus equally well away from the water as the engines of the Short monoplane—and each is encowled with a resistance-lessening Townend ring, the British invention which largely reduces the "drag" of radial aero motors.

Metal is employed exclusively for all of the main structural members. Much attention was paid by the designers to secure adequate seaworthiness; the hull is very strong and its lines suited to easy riding, even in rough seas. The craft is intended to carry normally a crew of five, for whom there is comfortable accommodation in the big hull. Equipment is comprehensive, enabling long journeys to be undertaken away from a base, and extends even to a dinghy.

The laden weight of the machine is roughly the same as that of the Short monoplane—between 8 and 8½ tons. Early trial flights have demonstrated its powers of unusually quick take-off, even with full load on board—an important point for safety and in case of operation in restricted waters.

If the usual procedure be followed, both of these new boats will be sent, after extensive trials in home waters, for a prolonged cruise in the Mediterranean and the Red Sea, to determine their behaviour in the drastic test imposed by the heat and humidity of the tropics.

CATALOGUE LIBRARY.

The undermentioned catalogues relating to United Kingdom manufacturers have recently been received and may be consulted by *bonâ fide* firms or individuals at the Office of His Majesty's Senior Trade Commissioner in India, Fairlie House, Fairlie Place, Calcutta.

<i>Names and Addresses.</i>	<i>Description.</i>
The Austin Motor Co., Ltd., Longbridge, Birmingham.	Motor Cars, Ambulances and Delivery Vans.
*Dunville & Co., Ltd., Royal Irish Distilleries, Belfast.	Whisky.
Holland & Holland, Ltd., 98, New Bond Street, London, W. 1.	Guns and Rifles.
Isaac Ross, Farnham Works, 13, Wood Hill, Leicester.	Boot and Shoe Machinery.
*J. H. Sankey & Son, Ltd., 7/8, Norfolk Street, Strand, London, W.C. 2.	Fire Bricks and Refractory Material.
Slazengers, Ltd., Cannon Street, London, E.C. 4.	Sports Goods.
F. W. Talbot, Pitt, Nr. Winchester.	Patent Machine for tapping Water and Gas Mains.
*John I Thornycroft & Co., Ltd., Thornycroft House, Smith Square, Westminster, London, S.W. 1.	Motor Boats and Marine Engines.

* Catalogues marked with an asterisk have also been received in the Office of His Majesty's Trade Commissioner, 3, Witlet Road, Ballard Estate, Bombay, where they may also be consulted by *bonâ fide* firms or individuals.

In addition, His Majesty's Trade Commissioner, Bombay, has recently received the undermentioned catalogues:—

<i>Names and Addresses.</i>	<i>Description.</i>
Joseph Adamson & Co., (In- corporating Tinker, Shenton & Co., Ltd., & Thomas Beeley & Son, Ltd.), Hyde, Cheshire.	Boiler Work, Hydraulic Pres- sings, Charging Machines, Electric Cranes and Welded Work.
The British Motor Boat Manu- facturing Co., Ltd., Britannia House, Ampton Street, London, W.C. 1.	Rylecraft Scoota-Boats for Amusement Parks, Boating Pools, Municipal Lakes, etc.
The Briton Brush Co., Ltd., Wymondham, Norfolk.	Brushes—household, paint and toilet.
The Central Information Bureau for Educational Films, 103, Kingsway, London, W.C. 2.	Instructional and Educational Films.
The Steel Scaffolding Co., Ltd., Imperial House, 80, Regent Street, London.	Steel tubular scaffolding and constructions.

II. M. TRADE COMMISSIONERS IN INDIA.

Calcutta—

Sir Thomas M. Ainscough, C.B.E.,
*His Majesty's Senior Trade Commissioner in
India and Ceylon.*

Mr. R. B. Willmot,
His Majesty's Trade Commissioner at Calcutta.
Post Box No. 683, Fairlie House, Fairlie Place.
Telegraphic Address.—"Tradcom, Calcutta."
Telephone No.—"Calcutta 1042."

Bombay—

Mr. W. D. M. Clarke,
His Majesty's Trade Commissioner at Bombay.
Post Box No. 815, 3, Wittet Road, Ballard
Estate.
Telegraphic Address.—"Tradcom, Bombay."
Telephone No.—"Bombay 23025."

Ceylon—

Imperial Trade Correspondent,
The Principal Collector of Customs, Colombo.

With Compliments.

APRIL



1934

The Commercial Bulletin

*A Monthly Review of Official and other
announcements relating particularly
to British Export Trade*

Issued by
**HIS MAJESTY'S SENIOR TRADE COMMISSIONER
IN INDIA AND CEYLON.**

**FAIRLIE HOUSE,
FAIRLIE PLACE,
CALCUTTA.**

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GENERAL.

The overseas trade of the United Kingdom continues to show a substantial measure of improvement and one of the most encouraging features of the official returns for February is the evidence they provide of the increased purchases of manufactured goods by the Dominions and Colonies.

Further corroboration is provided from South Africa which, according to the annual trade returns for the Union, in 1933, increased its purchases from the United Kingdom from 45·4 to 51 per cent. of the total imports.

A few of the more important instances of the growth in exports to Empire countries are given in the following tables:—

	<i>February,</i> <i>1934.</i> £	<i>February,</i> <i>1933.</i> £
<i>Iron and Steel—</i>		
Irish Free State	85,119	64,599
Palestine	57,332	6,698
South Africa	246,956	163,644
Sudan	13,757	5,754
India	257,133	204,976
New Zealand	126,811	57,249
West Indies	67,012	31,184
<i>Machinery—</i>		
South Africa	283,604	189,205
Rhodesia	9,597	1,121
East Africa	12,596	7,866
India	421,015	392,594
Australia	105,660	64,929
New Zealand	31,969	28,000
Canada	63,439	30,992
<i>Motor Cars—</i>		
Irish Free State	54,958	4,163
South Africa	110,535	57,966
Malaya	24,771	11,560
Ceylon	16,874	9,129
New Zealand	61,650	27,209
<i>Electrical Goods—</i>		
Irish Free State	21,373	15,674
South Africa	87,502	60,001
India	89,397	59,989
Australia	54,165	34,582
New Zealand	26,193	24,959
Canada	4,961	3,844

One of the most significant features of the February figures is the fact that the major proportion of the £8,279,320 increase in the imports over the previous February's figures is accounted for by the heavier purchases of raw materials, while the exports show a markedly higher daily average than in January.

The comparative figures for exports were:—

	£
February, 1931	30,060,451
January, 1931	31,609,383
February, 1933	27,927,687

The decrease in comparison with January is accounted for by the fact that there were twenty-seven working days in January and only twenty-four in February. The daily average for February is accordingly nearly £80,000 higher than that for January.

The general position may be summarized as follows:—

	February, 1931. £	February, 1933. £
Imports	57,353,979	49,074,659
Exports (including re-export) .	35,270,021	32,410,396

The total increase in the value of exports was £2,132,764, of which no less than £1,185,788 was accounted for by exports of manufactured goods. Of the twenty categories into which these are subdivided the chief increases were:—

Wool, vehicles, non-ferrous metals, iron and steel, electrical goods, oils, fats, resins, machinery and apparel.

Coal, for the first time in many months, figures among the increases in the exports of raw materials. Of the total increase of £630,910 under this head, coal was responsible for £341,499. The only other substantial increase was in raw wool to the value of £241,417.

Exports of food and drink increased by £330,320. Among the subdivisions under this head it is noticeable that beverages and cocoa preparations show an upward leap of £526,293. This is accounted for by the fact that the abolition of Prohibition in the U.S.A. has resulted in that country taking from the United Kingdom spirits to the value of £584,647, as compared with £495 in February, 1933.

Another encouraging sign of the improvement in conditions is the increase in the entrepôt trade of the United Kingdom. Re-exports last month totalled £5,209,570, an increase of £726,861 on the figures for February, 1933.

A further indication of progress is the steady decrease in unemployment. There were 67,000 more people at work in February than in January and 538,729 fewer workpeople were unemployed than in February, 1933.

BRITISH INDUSTRIES FAIR.

The results of the 1934 British Industries Fair have been very satisfactory. Reports from all sections indicate that the orders obtained by exhibitors for the home market were in excess of those resulting from the 1933 Fair. The volume of orders and enquiries secured from overseas markets is stated to be higher than at any previous Fair, a statement which is borne out by an increase of over 20 per cent. in the attendance of overseas buyers at the London section.

The attendances at the London section were:—

Overseas buyers	.	.	.	.	.	.	.	12,008
Home buyers	.	.	.	.	.	.	.	114,339
Public	.	.	.	.	.	.	.	84,536

and the total attendances at Birmingham were 124,507.

The textile section at the White City was particularly successful this year.

CONTRACTS SECURED.

New Zealand's big Rail Order.

It is announced that a contract has been signed on behalf of the New Zealand Government with United Kingdom firms involving the supply of permanent-way and other railway materials to the value of nearly £100,000. Ten ships are also being built in United Kingdom shipyards for the New Zealand trade.

South African Railway Orders.

Orders have recently been placed with United Kingdom manufacturers for the supply of nearly 8,000 tons of steel rails and fishplates for the South African

Railways and Harbours Administration. In addition there have been purchases of permanent-way fastenings, carriage fittings, telephone material, cranes and other goods.

Belgian Orders for Rolls-Royce Engines and Aeroplanes.

A further 36 United Kingdom aeroplane engines have been bought by the Belgian Government for its Air Force. They are Rolls-Royce supercharged Kestrel engines and are to be built into Fairey aircraft at the works erected for this purpose at Gosselies, near Charleroi.

It is reported that the Belgian Department of National Defence has ordered 90 more Fairey aeroplanes, 54 of which will have to be delivered to the Military Aviation Authorities in the course of the present year. The whole of the order is to be delivered gradually during the financial years 1934, 1935 and 1936.

Egyptian Government Contracts.

	£
P. & W. Maclellan, Ltd.—Copper ingots . . .	1,700
Frank How & Co., Ltd., London—Rolling stock oils . . .	850
Siemens Brothers & Co., Ltd., London—Automatic telephones . . .	19,630
W. T. Henley's Telegraph Works Co., Ltd., London . . .	} Wires . 1,700
The Whitecross Co., Ltd., Warrington . . .	
British Insulated Cables, Ltd., London . . .	
W. F. Dennis & Co., London . . .	
Metal Traders, Ltd., London—Tin ingots . . .	15,270
Thos. Hinshelwood & Co., Glasgow—Supply of boiled and raw linseed oils . . .	870
W. & T. Avery, Ltd., Birmingham—Weigh-bridges . . .	1,630
Arthur Balfour & Co., Ltd., Sheffield—Tool steel . . .	840

Swedish Railway Orders.

The Bergsladen Railways of Sweden have bought 16,000 tons of Durham Coal.

Bessler Waechter, Glover and Co., Ltd., Milburn House, Newcastle, have secured an order for 50,000 tons of coal for the Swedish State Railways on a timber barter basis. Atkinson, Glover, Burnip and Co., Ltd., the

associated firm of Bessler Waechter, Glover and Co., Ltd., have agreed to take the whole available supply of timber from the Swedish Forestry Department in payment for the coal. The delivery of the coal will take place from April to July.

Electrical Order from Egypt.

The British Thomson-Houston Co., Ltd., of Rugby, have been successful in securing the contract for the supply and installation of overhead and underground networks for the town of Bonch. The value of the contract is estimated to be £5,300.

New Orders from Finland.

Thomas Robinson and Sons, Ltd., Railway Works, Rochdale, have sold three flour milling machines to the Wasa Angkvarus Aktiebolag and also two sandpapering machines to the Finnish woodworking industry. These are the first woodworking machines of any importance to be sold in Finland and the orders were secured in the face of American competition.

Austrian Coal Order.

The Austrian Federal Railways have placed an order for 7,000 tons of Welsh coal with T. Bervon and Co., Ltd., of Cardiff.

United Kingdom Steel Tubes for Russia.

It is understood that the recent ratification of the Anglo-Russian trading agreement has been followed by an arrangement concluded recently between Arcos, Ltd., acting on behalf of the U.S.S.R. and the group which comprises practically all the United Kingdom tube manufacturers, for the shipment to Russia, within six months, of 20,000 tons of steel tubes, valued at approximately £1,000,000 and required for aircraft, railway and steelworks purposes and for general engineering. The orders will be distributed between Messrs. Stewarts and Lloyds, Ltd., of Glasgow; Messrs. Accles and Pollock, Ltd., and Tube Investments, Ltd., both of Oldbury, Birmingham, and associated, and subsidiary works throughout the United Kingdom. An option has also been agreed upon by the parties concerned for further deliveries of United Kingdom steel

tubes in approximately the same quantities (20,000 tons).

New Zealand Aircraft Order for Vickers.

It is announced that an order has been placed with Vickers (Aviation) for twelve Vickers "Vildebeest" torpedo bomber aircraft for the New Zealand Defence Department.

Chinese Rail Orders.

The Chinese Government Purchasing Commission has just placed in the United Kingdom two large orders for rails—10,000 tons for the Canton-Hankow Railway and 7,000 for the Shantung Railway—to be delivered at Hankow not later than June. These orders are divided between Dorman, Long and Co. and the Cargo Fleet Iron Co.

United Kingdom Coal for Italy.

It was reported recently that Genoa gasworks had negotiated for the purchase of 30,000 tons of best Durham gas coal.

Glasgow Contract for Foreign Destroyers.

A further contract has been placed with Yarrow and Co., Ltd., by the Portuguese Government for the construction of two more torpedo-boat destroyers, bringing the number of vessels ordered from Yarrow and Co. up to a total of seven. The machinery, Yarrow boilers, fittings, etc., will be constructed by Yarrow and Co., at Glasgow and the hulls will be built by the Sociedade de Construções e Reparações Navaes, Ltd., at Lisbon. All the steel material will be of United Kingdom origin.

Gold Mining Plant for Peru.

Fraser and Chalmers Engineering Works of the General Electric Co., Ltd., have recently secured an order from South America for a complete Gold Mining Plant for Peru. The plant is to have a capacity of 150 tons per day with provision made for future extension to 450 tons per day.

The plant is for location in the Andes at a height of 12,000 feet, and due to the difficult nature of the country, has had to be sectionalised to an unusual extent.

The total tonnage involved is 900, so that the difficulties of sectionalisation and transport will be readily appreciated. In the 60 miles from Cuzco, one has to climb a high mountain range 16,000 feet, descend into the deep canyon of the Apurimac, climb the other side and then still travel some distance through steep and rugged country.

A large part of the plant will be handled over this portion of the route by a fleet of aeroplanes, these taking 30 minutes to arrive at the Mine, whilst a mule would need $2\frac{1}{2}$ to 3 days to travel the same distance.

The value of the present order, which has been secured against acute United States and Continental competition, is £30,000.

Messrs. Bruce Peebles and Co., Ltd., Edinburgh, have recently secured a contract for the supply and erection of 23—Steel Cylinder type Mercury Arc Rectifier Equipments representing 57,500 K. W. of Rectifiers complete with main and auxiliary transformers, re-cooler equipments, control panels and accessories. These installations are in connection with the Eastbourne-Hastings electrification extensions of the Southern Railway.

The firm have also secured through their local agents a contract for a 500 Kilowatt Glass Bulb Mercury Arc Rectifier Equipment complete for the Karachi Electric Supply Corporation.

INCREASES IN CAPITAL.

	£
W. Lusty & Sons, Ltd. (Furniture Mfrs.)	50,000
London Nigerian Tin Mines, Ltd.	500,000
The Crumlin Valley Collieries, Ltd.	150,000
General Aircraft, Ltd.	99,900
The Yorkshire Brick Co., Ltd.	350,000
B. Laporte, Ltd. (Chemicals)	100,000

THE IRON AND STEEL INDUSTRY.

All the major iron and steel producing areas continue to report a continuance and, in some cases, a further development of the improvement in business which has been the outstanding characteristic of recent months.

The tone of the iron and steel market as a whole has remained firm. Although during February a certain falling-off in new business was noted in some departments this was attributed to a large extent to the natural reaction from the large buying movement which developed in the earlier weeks of the year, and recently more active conditions have been evident.

Activity in the pig iron industry continues to increase at an appreciable rate. Demand has not apparently been affected to any marked extent by the upward trend in prices. Although many important consumers have covered their requirements for some time ahead, there has recently been a disposition on the part of other buyers to take larger tonnages. Business in the semi-finished steel department continues to develop on an increasing scale, but conditions in finished steel products are irregular.

In view of the fact that by far the major portion of current business is on domestic account it is encouraging to note that demand from the principal steel consuming industries at home continues to expand and in addition is extending over a wider area. The ship-building industry is still suffering severely from the depression but, none the less, activity in the shipyards during recent months has shown a welcome increase as a result of the expansion in the volume of both mercantile and Admiralty orders, and has been reflected in an increased demand for iron and steel. It remains true, of course, that the demand from the shipyards is still far below normal.

The iron and steel industry has also benefited appreciably from the contracts placed by the home railways which have launched important development and re-conditioning schemes involving the expenditure of substantial sums of money. The motor-car industry as a whole is operating at a high level and is anticipating an active Spring demand. An increased call for steel has also been evident in the building trades, stimulated no doubt by the favourable weather conditions.

In contrast to domestic business export trade continues to be increasingly difficult and uncertain, and there is intense competition for the small amount of business available. As a result of the exceptionally low level of buying during recent years there must exist in overseas markets as a whole a large potential demand

for iron and steel products of all kinds, but there seems little prospect of this potential demand being translated into an effective consuming demand until concerted progress is made towards the relaxation of the more harmful of the numerous restrictions which have been introduced during the past few years. Excessive tariffs: stringent quota systems: currency uncertainty: exchange restrictions: and political instability all combine to render international trade at the present time an overwhelmingly difficult and hazardous business.

During February there was a net increase of five in the number of furnaces in blast in the United Kingdom, seven additional furnaces being blown in and two ceasing operations: at the end of the month there were 90 furnaces in blast compared with 63 at the end of February, 1933, and 81 at the end of December. The total output of pig iron in February amounted to 414,000 tons, compared with 441,000 tons in January. Although the total output showed a decline this was attributable to the shorter month; the actual daily rate of output in February was some 4 per cent. higher than in the preceding month. Similarly, the production of crude steel in February, at 708,000 tons, although slightly lower than in January (711,000 tons), represented in point of fact a higher rate of operations.

Imports of iron and steel showed a further small increase in February when they amounted to 123,000 tons, compared with 120,000 tons in January and 78,000 tons in February last year. While this heavier import tonnage affords further confirmation of the active domestic demand for iron and steel products, it demonstrates at the same time that there is still a substantial volume of business, which home producers are capable of satisfying, being executed by foreign suppliers.

Some four-fifths of last month's imports of iron and steel came from Belgium, France, Germany and Luxemburg, indicating the strenuous efforts which are being made by Continental producers to strengthen their foothold in this market. In order to achieve this objective they are continuing their policy of quoting prices in the United Kingdom which are substantially lower than those which they quote for other markets.

Previous reference has been made to the extraordinary difficulties encountered in international trade at the present time. At a result of the numerous obstructive and

restrictive factors in existence there was a further decline in the total iron and steel exports from the United Kingdom in February, when they totalled 142,000 tons, compared with 164,000 tons in January. They were, however, slightly higher than in February, 1933, when they amounted to 136,000 tons.

MACHINE TOOLS.

AUTOMATIC TAPPING MACHINE.

The Beacon Engineering Company, Hurst Lane, Tipton, Staffs, have introduced an automatic tapping machine designed to tap holes in cast iron from $\frac{1}{4}$ inch to $\frac{3}{4}$ inch and holes in steel from $\frac{1}{4}$ inch to $\frac{3}{4}$ inch diameter. The maximum depth to which holes can be tapped is $2\frac{1}{2}$ inches.

The base of the machine is of sturdy proportions and accommodates the countershaft for belt drive to the forward and reverse clutch pulleys. Each of these is carried by two taper roller bearings mounted on a long phosphor-bronze sleeve. The sleeves pass through and are held by the bearing caps. The spindle is thus relieved of the pull of the belt which is taken by the stationary sleeves in which the spindle is free to rotate. A floating tap holder is fitted to the nose of the spindle which has $3\frac{1}{2}$ inches of vertical movement. The tension on the friction clutch pulleys is adjustable to a fine degree in order to ensure the exact amount of power necessary to drive a particular size of tap.

The work table provides an effective surface 21 inches in diameter and is T-slotted to receive clamping bolts. It is rotatable in the table bracket, the latter being vertically adjustable on the column of the machine to give a maximum distance of 23 inches from the spindle to the table surface. The distance from the centre of the table to the pillar is $12\frac{5}{8}$ inches.

In operation the hole is located beneath the tap, and the starting lever pulled down until the tap enters the work, the remainder of the operation being automatic. At the desired depth, predetermined by a stop, the feed is tripped and the spindle reversed at high speed. The spindle is balanced to ensure that the initial thread is not stripped as the tap leaves the hole.

Craven Bros. (Manchester), Ltd., Vauxhall Works, Reddish, Stockport, have recently booked a number of orders including a 6-inch spindle horizontal boring machine, a 72-inch swing roll grinding machine and two motor-driven, semi-universal rigid milling machines, one being required for South Africa. Railway plant for overseas includes a 4-foot 6-inch wagon wheel lathe, a 7-foot locomotive wheel lathe and five 4-foot carriage and wagon wheel lathes.

Vertical boring and turning mills also figure largely in the export orders, some 20 machines being required, the majority of which have to be equipped with side heads. Other overseas orders include a 44-inch centre lathe fitted with grinding head to admit 26 feet 6 inches between centres and a 60,000-kg. hydraulic press for Poland.

Dean, Smith and Grace, Ltd., Worth Valley Works, Keighley, find business improved and are busy with their latest standard types of lathes on both home and overseas account. Orders have been received recently from various railway companies for surfacing and boring lathes.

D. Mitchell and Co., Ltd., Parson Street, Keighley, report steady business in lathes and radial drilling machines. Orders for the lathes range from 6-inch to 16-inch centres, while the radial drills are chiefly of 4 and 5-foot capacity.

AUTOMOBILE AND ALLIED TRADES.

MARINE MOTORS FOR SMALL CRAFT.

A Growing Branch of the British Motor Industry.

The use of the internal combustion engine for the propulsion of motor boats, for both trade and pleasure purposes, is of course no new development, indeed, the Marine Section of the Society of Motor Manufacturers and Traders, Ltd., is one of its oldest sections, being but one year younger than the Society itself. Prior to the War, the use of motor boats had reached a certain degree of popularity, although for pleasure purposes the Yacht was still supreme, while for coastal commerce the steam propelled vessel was the more favoured, and on inland waterways horse traction was usual. However, with the

advent of the internal combustion engine, some ardent exponents of coastal travel immediately endeavoured to adapt this form of power unit into a boat, but the early attempts were, at the best, only partially successful.

It was not then fully realised that an engine, when installed in a boat, encounters much heavier conditions than does a car engine, which has periods when running on the level or downhill when it is not developing its full power, whereas a motor boat engine is working at top pressure for the whole of the journey.

In the early days, also, the engine and hull were invariably unsuited to each other. Many times a heavy hull, of perhaps an ex-ship's lifeboat, would be converted into a motor boat by the inclusion of an extremely light, somewhat high-speed engine, and, curious as it may seem, the favourite idea prevalent in those days was to use not even a standard car engine, but one that had been made extra light in order to get more power for its weight and was consequently more fragile than ever for motor boat work. While this might be fairly satisfactory for a light racing hull, it was certainly not so for a heavy hull.

Although it is difficult to say definitely when motor boating really commenced, it is certain that a large number of motor boats were in use and doing good service at the time of the Motor Car "Emancipation Day" Tour to Brighton in November, 1896.

About 1900 much more interest was being taken in motoring afloat, records indicating that on the River Thames above Chiswick, there were some 200 craft of varying sizes and descriptions in full commission.

The history of Motor Boating, in common with all rapidly developing forms of endeavour, is largely connected with the history of its Racing and Sporting side. Nothing improved the design of Motor Boats so much as the competitive spirit, zeal, and energy put into the early contests.

When the War broke out, Motor Boats as speed craft were well developed, and the Authorities were able, without the necessity for experimental work, to produce fleets of fast boats in large numbers, the two main classes being M.L.'s and C.M.B.'s. The development of the Motor Cruiser and the Motor Launch, as well as Racing boats, was directly the outcome of the Race Programmes of the clubs of the United Kingdom and overseas.

Since the War, the development has been most marked. The Annual Motor Boat Exhibition, which of late years has been incorporated as a Section of the Motor Exhibition at Olympia, has become a centre of growing interest, and with the development in cruising, assistance and information available through the Marine counterpart of the road organisations, the number of motor boat owners is continually expanding.

The development of the compression ignition engine is tending to lower running costs, and is finding increasing favour with commercial craft.

The range of motor boats is so extensive, from the outboard engine to the 50-100 foot cruiser and the Auxiliary Motor Yacht, that the prospective owner has a variety of craft to choose from to meet his requirements.

It is not possible to gauge from actual statistics the growth of production, and, further, the subject is rendered more difficult by reason of the conversions of former types of craft that are carried out by boatyards or by owners themselves, but reports from boatbuilding centres undoubtedly prove that United Kingdom Manufacturers are finding a growing demand for their craft.

The export of craft and engines from the United Kingdom is showing promising improvement. Thus, one manufacturer has recently exported boats and engines to Jaffa, Haifa, the Mediterranean, Egypt, the Dutch East Indies, and the Barbadoes.

TEXTILES.

COTTON.

The raw cotton situation remains unsettled. Prices are comparatively steady, but there is not sufficient confidence in them to promote buying. Even if the American crop is substantially reduced by the passing of the Bankhead Bill, it is anticipated that the natural rise in prices consequent on this will stimulate production of cotton elsewhere to such an extent as to reduce, if not to destroy, any advantage that might be expected from higher prices.

Spinners are still meeting with many difficulties. Low offers are reported to be plentiful, but the price agreements are being adhered to, and business is consequently slack. The spinners of medium counts of

American yarns stopped producing during the first week in March, in order to avoid accumulation of stock, which would weaken the market, and this action was not without effect. At the same time, some special lines of Egyptian yarns are reported to have done fairly well and hosiery yarns have been in good demand. In the cloth section active enquiry has been received from India for a variety of goods, but the resultant dealings have been hardly up to expectations. Printed and dyed goods, however, have been in demand for Bombay and whites for Madras and Karachi. Calcutta has shown interest in dhooties. The Indian Trade Returns show that while the total imports into India continue to decrease the United Kingdom's contributions are in many cases maintained at their former level.

In other Eastern markets demand has been small, though some orders have been booked for printers for the Near East.

The South American countries continue to place orders for a variety of cloths, and drills and poplins have been bought for the Dominions. Plain finishing cloths have been booked for various continental markets, and a wide range of cloths including sheetings, linings, casements, and some fancies have been taken by the home trade.

The exports of cotton goods during February show a slight decline from those in January, which can be attributed to the smaller number of working days in the month, but they show a greater decrease from those of a year ago :-

	<i>Feb.</i>	<i>Jan.</i>	<i>Feb.</i>
<i>Yarns.</i>	<i>1931.</i>	<i>1931.</i>	<i>1933.</i>
	<i>1,000 lb.</i>	<i>1,000 lb.</i>	<i>1,000 lb.</i>
Grey	10,025	11,212	10,531
Bleached and dyed	1,281	1,556	1,355
	<i>1,000</i>	<i>1,000</i>	<i>1,000</i>
<i>Piece Goods.</i>	<i>sq. yds.</i>	<i>sq. yds.</i>	<i>sq. yds.</i>
Grey	31,916	38,175	33,894
Bleached	53,279	54,015	69,630
Printed	29,768	31,920	29,303
Dyed in the piece	45,293	46,962	51,655
Dyed in the yarn	7,931	8,006	10,079
Total piece goods	168,187	179,078	194,561

LINEN.

Some of the local flax markets have held their last market for the season and there can be little of the past season's flax remaining unsold. Prices have been well maintained during the season, the average price ranging from 8 to 10 shillings per stone.

In the yarn market prices have risen by from 9*d.* to 1*s.* per bundle and there is more activity. Exports of yarns for the month of February were valued at £65,199 as compared with £62,043 in February, 1933, and £47,390 in February, 1932.

Exports of piece goods were maintained in value at above last year's figures, the comparison for February, 1934, and 1933 being £294,151 and £289,860. There was a considerable decrease in the value of these goods exported during the month to the United States of America, the total being £110,341 as compared with £128,881 in January, £144,688 in February, 1933, and £125,682 in February, 1932. This falling off was, however, more than made up by increased exports to almost every other market. Canada and Australia, the next two most important markets of the month for piece goods, took respectively £23,157 and £21,756 as compared with £16,576 and £18,099 in February, 1933.

Exports of damask table linen increased to £48,288 as compared with £41,144 and £48,797 in February, 1933 and 1932, respectively. Here also the United States of America proportion showed a marked reduction but the United Kingdom markets with a high percentage increase raised the total export figure.

Handkerchiefs continued to make a poor showing, exports for the month being £13,290 as compared with £19,926 in 1933 and £19,925 in 1932. This reduction is more than accounted for by the United States of America figure which fell over 50 per cent.

Imports of linen goods, including yarns, into the United Kingdom during February were valued at £25,783 as compared with £19,493 and £247,044 in February, 1933 and 1932, respectively.

The total value of linen goods exported from the United Kingdom during February, 1934, 1933 and 1932 were respectively £434,909, £434,005 and £423,743.

Total exports of linen goods from the United Kingdom during the first two months of 1934, 1933 and 1932 were respectively £928,323, £868,388 and £868,611.

The quantities of linen piece goods exported during the same periods were 12,851,000, 12,897,000 and 12,012,000 square yards.

WOOL.

The following figures show the increased quantity of raw materials imported during the first two months of this year for use in the wool textile industry in addition to home-grown wool compared with the imports in January/February, 1933.

	<i>Jan.-Feb. 1934. lb.</i>	<i>Jan.-Feb. 1933. lb.</i>
Sheeps' wool . . .	250,498,000	206,852,000
Alpaca, etc. . . .	626,000	473,000
Camel hair	23,000	658,000
Mohair	1,840,000	1,546,000

Only 61,132,000 lbs. of the sheeps' wool was re-exported this year against 81,156,000 lbs. last year, which means that 189½ million lbs. was retained for the industry in January/February this year against 125½ million lbs. in 1933.

The second series of London Wool Sales opened with a slight fall in values, but prices re-acted somewhat during the second week. The output from the combs is not up to the level of the earlier weeks of the year, but there is still a good consumption of wool. Spinners are finding more enquiry for crossbred yarns, especially from the continent.

Manufacturers in the West of England are well employed and mills in the Dewsbury heavy woollen district have orders in hand which will keep them busy for some time, some of their orders being for overseas markets, particularly the Scandinavian countries, Canada and South Africa. The Dominions are also buying flannels. Short time is being worked by many Scottish manufacturers and makers of Huddersfield fine worsteds are not so well employed as those making medium grades and woollens.

The export of wool textile semi-manufactures and tissues during the first two months of this year show an increase under all headings over the quantities exported

in the corresponding period of last year. The principal increases are:—

	1934.	1933.
	<i>Jan.-Feb.</i>	<i>Jan.-Feb.</i>
	<i>lbs.</i>	<i>lbs.</i>
Tops	7,864,000	7,508,000
Woollen yarn	1,225,400	1,117,800
Worsted yarn	5,888,500	4,721,800
	<i>sq. yds.</i>	<i>sq. yds.</i>
Woollen tissues	12,392,000	10,650,000
Worsted tissues	7,044,000	6,189,000

More than twice the quantity of flannels exported during January and February, 1933, had been sent to overseas markets by the end of February this year.

POTTERY AND GLASSWARE.

From recent reports it would appear that trade in the pottery industry is definitely expanding, particularly so far as requirements for the Home market are concerned. Recent unemployment figures published indicated that 11,532 operatives were either out of work or on short time, representing a reduction of 1,981 compared with a month previous and no less than 6,517 compared with a year ago.

Conditions in the sanitary ware and tiles sections of the industry are reported to be good, the factories concerned being well engaged for some time ahead.

The pottery firms participating in the British Industries Fair appear to be well satisfied with the results obtained both as regards Home and Overseas trade.

Following are details of the exports of pottery for the first two months of 1934 together with comparative figures for the corresponding period of 1933.

<i>Class.</i>	<i>Value of Exports.</i>		<i>Increase.</i>	<i>Increase per cent. over 1933.</i>
	<i>1934.</i>	<i>1933.</i>		
	<i>£</i>	<i>£</i>	<i>£</i>	
Tiles (all classes) . .	35,215	30,040	5,175	17·2
Sanitaryware	94,648	92,519	2,129	2·3
Chinaware	31,285	24,852	6,433	26·0
Electrical ware	13,103	9,609	3,494	36·4
Earthenware of all other descriptions.	223,195	207,925	15,270	7·3
Refractory goods not elsewhere specified.	33,835	30,650	3,185	10·4
All others descriptions	11,027	10,013	1,014	10·0
Total	442,808	405,608	36,700	9·0

GLASS AND GLASSWARE.

Following are details of the exports of glass and glassware for the first two months of 1934, together with comparative figures for the corresponding period of 1933.

<i>Glass.</i>	<i>Value of Exports.</i>		<i>Increase</i>	
	<i>1931.</i>	<i>1933.</i>	<i>Increase.</i>	<i>per cent.</i>
	£	£	£	<i>over 1933.</i>
Scientific glassware .	11,943	11,615	328	2·8
Domestic and fancy glassware.	23,875	20,084	3,791	18·9
Plate and sheet glass .	120,219	106,465	13,754	13·0
Glass bottles and jars .	35,118	38,839	3,721	9·6
			(dec.)	(dec.)
All other kinds of glass and glassware.	14,587	13,541	1,046	8·0
Total .	205,742	190,517	15,195	7·9

PAPER.

Conditions in the paper industry continue to show a slight but steady improvement. It would appear that the bulk of the production is being absorbed by the home market, as according to the trade returns the amount of paper, stationery, etc., exported during the first two months of this year shows a decrease as compared with the corresponding period of the years 1933 and 1932. The figures being:—

	<i>1931.</i>	£
1931	591,896	988,723
1933	629,181	981,245
1932	622,292	1,060,607

The decline is mainly accounted for by reduced shipments of newsprint to Australia during January as compared with the volume of exports during the same month of 1933 and 1932.

New Process of Printing.

A new process known as the Lustre Printing Process has recently been introduced. At present it is being used on dress and furnishing fabrics, but it has been found possible to adapt it to other materials such as transparent wrapping and other grades of paper.

Engraved rollers are used as in the normal printing process but instead of printing ink use is made of rayon synthetic glass, metals, etc. The synthetic glass printing produces a rich diamanté effect and when applied to fancy papers for wrapping purposes is most attractive.

The process which is of United Kingdom invention is being marketed by Lustre Mills Limited, Gorton, Manchester.

AVIATION.

NEW AIRCRAFT FOR IMPERIAL AIRWAYS.

Two new types of airliner built for Imperial Airways, both of them likely to go into service within the next two or three months, possess unusual interest. One is the biggest landplane yet constructed for regular airline working; the other is at once the smallest and the fastest four-engined commercial plane in existence. Differing widely in appearance and performance, they are alike in possession of certain qualities that are generally recognized to typify the present-day United Kingdom airliner. They have a big safety margin, implicit in ease of control and reasonably slow landing speeds as in a four-engined powerplant. They transport big loads relatively to the horsepower expended. They are economical and robust in structure. They are built for intensive flying. And they provide accommodation for the passengers which is at least as comfortable and quiet as can be found in the best comparable foreign machine.

Final assembly of the Short "Scylla" biplane was done perforce in the open on the new Rochester aerodrome. There is no flying field beside the Short works, which is located on the River Medway. So every main component—fuselage, wings, tail unit, undercarriage, engines—was carried separately from the factory, a distance of nearly two miles, to the aerodrome.

Trial flights were scheduled to take place before the end of March, after which the craft will be taken over by Imperial Airways for a period of experimental flying before it begins regular work on the London-Paris and allied routes. It and its sister machine, which will be called "Syrinx," may be placed in service on the United Kingdom route as far as Marseilles when the time comes—probably in June—for

substitution of an aeroplane journey for the present train trip between Paris and Brindisi.

Structurally, "Scylla" and "Syrinx" are similar to the Short "Scipio" four-engined boats which operate the British trans-Mediterranean services. The chief, and inevitable, alteration is the elimination of boat hull and wing-tip floats, and their replacement by fuselage and land undercarriage. The arrangement of engines and the wing structure are identical in boat and landplane, a very large number of the components are interchangeable, which simplifies storage problems.

Fully laden, the "Scylla" weighs approximately 32,000 pounds, of which 8,000 pounds represents the weight of the crew (four men) and pay-load. Power derived from four Bristol "Jupiter" 555/600 h.p. engines will drive the big machine at a maximum speed of nearly 140 m.p.h. and enable it to cruise ordinarily at about 108 m.p.h. It represents, therefore, a step forward along the lines of maximum comfort and economy which have attracted the bulk of London-Paris passenger traffic to the United Kingdom company. Extreme speed is not its marketable asset.

The interior furnishings are superb, surpassing in comfort any accommodation yet available in a heavier-than-air flying machine. There are seats for thirty-nine passengers in two cabins, one of them a smoking room for ten in front of the plane of the air-screws, and the other providing twenty-nine seats aft. The latter cabin is the roomiest yet built in a landplane, measuring approximately twenty-two feet in length, eleven feet in breadth and averaging well over seven feet in height.

Two baggage compartments are provided. Between the fore and aft passenger cabins is one of 58½ cubic feet capacity, which is used for trimming the aeroplane. Behind the aft passenger cabin is a second baggage compartment, measuring 230 cubic feet.

Main overall dimensions give an idea of the size to which practical air transport vehicles have advanced. The upper plane spans 113 feet from tip to tip; the lower plane 92½ feet. The tailplane is much larger than a light aeroplane; its span is 34 feet and its chord (depth from front to back) is 11 feet. The fuselage is 77 feet 4 inches long and its maximum width is 11½ feet. In height, with the machine in flying attitude, the "Scylla" measures 31 feet 7 inches. The area of the

main planes is 2,615 square feet, of the tail plane and elevators 334 square feet, and of the fin and rudder 152 square feet. Up to 625 gallons of fuel, weighing 2 tons 3 cwt., can be carried in three tanks located in the upper centre plane.

Dome lights fitted in the roofs provide general illumination for the passenger cabins. Pendant lamps are fitted over each table, of which one is provided between each two rows of passengers. Extremely large windows are fitted; above them are racks for light luggage. Adjustable punkah louvres admit fresh air in the proportion desired by the individual traveller. Hot air enters through light aluminium ducts situated at floor level at the sides of the fuselage; its supply is regulated by means of circular diaphragm shutters. The walls are panelled with figured walnut veneers and the remainder of the furnishings are in harmony. The armchair seats, designed on the basis of years of experience, are light but extremely comfortable, giving restful support for the head and shoulders.

Imperial Airways other new machine is the de Havilland D.H. 86. This biplane, which was built to conform with the conditions laid down by the Australian Government for operation of the airway linking Singapore with Port Darwin and Cootamundra, New South Wales, has now passed through all of its official trials with flying colours. Test pilots of the Martlesham Heath Experimental Station, through which all new types of British landplane must pass before a certificate of airworthiness is granted, gave it a maximum speed in excess of 170 miles an hour and a cruising speed (reckoned as 85 per cent. of maximum speed) of more than 145 m.p.h. Its "ceiling" on the power of four 184/205 h.p. "Gipsy-Six" engines is 20,500 feet, on the power of any three 15,000 feet, and, in the worst possible "two-engine" case with two engines stopped on one side, the ceiling is 3,600 feet. All of these trials were made with the craft laden to the maximum permissible weight of 9,200 pounds; in the same condition the minimum flying speed was established at 66 m.p.h. Rarely indeed does an airliner land with full load. Fuel and oil consumed during a journey will generally have lessened the weight of this machine by some 900 pounds and the true landing speed is, therefore, around sixty miles an hour, which is low.

The roomy and well-lit cabin of the D.H. 86 is fitted to accommodate ten passengers. A crew of two is carried in the control compartment forward, which is provided with full equipment for navigation by night and day. The range of the machine, equipped for the Australia run, would cover the requirements of the Federal Government—600 miles against a steady head wind of 30 m.p.h.—by a wide margin.

Early in April the D.H. 86 were to be ready to take the air for experimental trips over the Imperial Airways routes. Detail refinements are likely to add five miles an hour, perhaps more, to its maximum level speed.

THE PLASTICS INDUSTRY.

Contributed by the British Plastics Federation, Ltd.

Although celluloid has been in use as a plastic material of commerce for about sixty years, the modern plastics industry may be said to have had its beginning just over thirty years ago when compositions of a bituminous nature were fashioned into articles for use in the electrical industry, by pressing the material in hardened steel dies. These compositions, as the name implies, were compounded from natural bitumens with the addition of coal tar pitch and gums, and filling materials such as asbestos and finely ground slate, and gave a moulding composition which possessed electrical insulation qualities of no mean order. The early articles produced were conduit insulating bushes, meter and terminal blocks, switch handles, and many such components are still produced to-day. This type of material is now largely used in producing telegraph and telephone line insulators and moulded bird guards for use on such lines overseas. Large quantities of accumulator battery boxes are moulded from these compositions, for use in motor vehicles of all descriptions. Gramophone records are made from similar materials of a higher grade wherein the bitumen is replaced by shellac as the main binding agent. All these compositions soften under the influence of varying degrees of heat; on account of this they are termed thermo plastics, and this militates against their use in many electrical components.

The rapid development of the Plastics Industry in recent years dates from the introduction of synthetic

resins as binders for mouldable compositions. These resins were first produced by Dr. Baekeland in America and were made by combining phenol (carbolic acid) and formaldehyde by a chemical process known as condensation. By taking these resins at an intermediate (fusible) stage of condensation it is possible to cast them into such articles as cigarette tubes, pipe mouthpieces, and umbrella handles; subsequent treatment of the moulds under heat and increased atmospheric pressure converts the mouldings into a solid and infusible condition and because of this, such resins are designated as thermo setting. Cast mouldings produced as indicated have not great mechanical strength, and in order to obtain strong mouldings, mouldable compositions resulting from the admixture of the intermediate stage resins with fibrous fillers such as woodflour, shredded or flaked fabric, are used in heated steel dies under hydraulic pressure. Again, the electrical industry claims the credit of the first use of such mouldings and the application of these newer thermo setting plastics has developed in the electrical industry to such an extent that it can be said there is no electrical component or accessory which is not made in plastic or has not a plastic part in its make up. First of all these materials were used mainly on grounds of insulation but now are as much used as materials of construction as of insulation. This naturally leads to their adoption in many trades other than electrical, and their use has rapidly been extended in the building trade and the fabrication of items of domestic and office equipment is unlimited. Nearly all modern telephone instruments are entirely moulded in plastic materials of thermo setting type. The use of phenol in producing the resin bases also naturally led to the use of other similar bases such as cresol. These phenol or cresol base materials have certain restrictions in the production of delicately coloured compositions and further impetus has been given to the plastics industry in the last few years, by the introduction of amino base thermo setting resins. By the use of these resins, which are water white in colour, in addition to white mouldable compositions, pastel shades of delicate colours are also obtainable, thus widely increasing the range of application. Non-fragile table ware in chaste designs and colourings, are now becoming well established in the modern home, and the advantages of such ware for travel and picnic use have been quickly recognised. Attractive

cabin and lavatory fittings are now fashioned for use on all modern ships, largely on account of the non-furnishability of the materials from which they are made. All these thermo setting materials are moulded into the desired articles in the same way, that is by pressing under heat in specially prepared steel dies at pressures of 20 to 30 cwts per square inch obtainable by use of hydraulic presses. The making of the dies has introduced a new craftsmanship into tool making, and much care has to be expended on the design of such dies which are made from special alloy steels allowing of a highly polished and hardened surface to be produced on the moulds. The finished mouldings have a surface corresponding perfectly to that of the moulds in which they are made.

The various synthetic resins mentioned have also a large field of application in the production of what is called laminated material. This consists of sheets or ribbons of paper, cotton, linen or silk, which have been impregnated with the resins in their intermediate stage. the individual sheets being subsequently piled and pressed together under heat in large presses, resulting in large plates up to $4\frac{1}{2}$ inches thick. This laminated material in its different varieties is used as insulation in many forms of electrical and wireless construction, but considerable quantities are also employed in the production of silent gears for power transmission both in motor vehicles and in stationary machinery. In addition to these gears being silent as compared with metal to metal gears, they have superior wearing qualities particularly if called upon to operate in chemical liquors. Paper coated ribbons are rolled on mandrils to form tubes of varying shaped sections and large high voltage insulators for electric transmission are manufactured by the same method.

Other types of basic materials used in the plastics industry are *Celluloid*, already noted as the earliest of all, which is marketed in the form of sheets, rods and tubes in all colours, transparent as well as opaque. It is manufactured from cotton or paper which has been treated under suitable conditions with nitric acid, the nitrocellulose thus formed being compounded with camphor and other solvents to convert it into a mouldable material. It is largely used in the production of toilet articles such as combs, tooth and shaving brush handles and fancy trinkets. It is also used in the

manufacture of safety glass, wireless accumulator cases and photographic films.

Cellulose Acetate.—This is of a similar nature to celluloid but produced by use of acetic acid instead of nitric and thus gives a plastic of a non-inflammable nature. It is also used for the production of toilet articles and radio parts; fountain pen and propelling pencil barrels, and cycle pump handles are moulded from it by a new moulding process described as "injection". In sheet form it has a wide application in the manufacture of artistic lampshades and many delightful linen and moire surface finishes have now recently become available.

Casein.—This is a protein substance obtained from milk as a bye-product in the after stages of butter production and has the property of being converted into a hard horny substance when treated with formaldehyde. This material is likewise marketed in the form of rods, tubes and sheets which are fashioned by shaping, turning and drilling into such articles as buttons, buckles, umbrella handles and brush backs.

Of the many ways in which plastic materials are fashioned into useful commodities, by far the greatest in use is press moulding. This process on the aesthetic side has so far been confined to form and character in shape with marbled effects in colour, but recently many artistic articles have been made on which the after decoration of the mouldings has been practised. This feature may be said to be only in its infancy, and the progress which has already been made indicates that there is a valuable field of development to be explored which will yet add to the wide range of applications of this modern industry's products.

CATALOGUE LIBRARY.

The undermentioned catalogues relating to United Kingdom manufacturers have recently been received and may be consulted by *bonâ fide* firms or individuals at the Office of His Majesty's Senior Trade Commissioner in India, Fairlie House, Fairlie Place, Calcutta.

Names and Addresses.

Description.

- | | |
|---|------------------------------|
| B. S. A. Cycles, Ltd., Birmin-
gham. | Motor Cycles and Sidecars. |
| C. W. Field, Ltd., 92, Wood
Street, Liverpool. | Essences and Essential Oils. |

<i>Names and Addresses.</i>	<i>Description.</i>
Gunn & Moore, Ltd., 49, Car- rington Street, Nottingham.	Sports Goods.
J. H. Sankey & Son, Ltd., 7/8, Norfolk Street, Strand, London, W.C. 2.	Fire Bricks.
Singer & Co., Ltd., Coventry.	Motor Cars.
* Westgate, Ltd., Australia House, London, W.C. 2.	Complete Canning Equipment.

* The catalogue marked with an asterisk has also been received in the office of His Majesty's Trade Commissioner, 3, Wittet Road, Ballard Estate, Bombay, where it may also be consulted by *bonâ fide* firms or individuals.

In addition, His Majesty's Trade Commissioner, Bombay, has recently received the undermentioned catalogues:—

<i>Names and Addresses.</i>	<i>Description.</i>
Slazengers, Ltd., Lawrence Pountney Hill, Cannon Street, London, E.C. 4.	Sports Goods.
The Austin Motor Co., Ltd., Box 41, G. P. O., Longbridge Works, Birmingham.	Motor Cars.

TRADE ENQUIRIES.

The names of the United Kingdom firms referred to in the enquiries mentioned below will be furnished to reputable firms on application to His Majesty's Senior Trade Commissioner, Post Box No. 683, Fairlie House, Fairlie Place, Calcutta.

No. 386-34.

A United Kingdom firm manufacturing chemicals and colours for glassware is desirous of getting into touch with a firm of chemical and colour merchants dealing with glassmakers with a view to appointing agents.

No. 444-34.

A United Kingdom firm who have recently become interested in the development of export trade in a fire-proof material are desirous of appointing agents in this market. For this article it is claimed that fabrics and all absorbent material can be rendered non-inflammable if treated with it. It is stated to be very suitable for light materials and tapestries for exhibition purposes. Timber can be effectively treated, while the liquid is also suitable for application to wallboards, packing papers, gunny bags, etc.

H. M. TRADE COMMISSIONERS IN INDIA.

Calcutta—

Sir Thomas M. Ainscough, C.B.E.,
*His Majesty's Senior Trade Commissioner in
India and Ceylon.*

Mr. R. B. Willmot,
His Majesty's Trade Commissioner at Calcutta.
Post Box No. 683, Fairlie House, Fairlie Place.
Telegraphic Address.—"Tradcom, Calcutta."
Telephone No.—"Calcutta 1042."

Bombay—

Mr. W. D. M. Clarke,
His Majesty's Trade Commissioner at Bombay.
Post Box No. 815, 3, Wittet Road, Ballard
Estate.
Telegraphic Address.—"Tradcom, Bombay."
Telephone No.—"Bombay 23025."

Ceylon—

Imperial Trade Correspondent,
The Principal Collector of Customs, Colombo.

With Compliments.

MAY



1934

The Commercial Bulletin

*A Monthly Review of Official and other
announcements relating particularly
to British Export Trade*

Issued by

**HIS MAJESTY'S SENIOR TRADE COMMISSIONER
IN INDIA AND CEYLON.**

**FAIRLIE HOUSE,
FAIRLIE PLACE,
CALCUTTA.**

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H. M. TRADE COMMISSIONER SERVICE.

Mr. W. D. M. Clarke, H.M. Trade Commissioner at Bombay, left Bombay on May 19th, on leave out of India.

FIRST AFGHAN INDUSTRIAL EXHIBITION.

KABUL -AUGUST 1934.

The attention of all readers of the "Commercial Bulletin", who may be interested in trade with Afghanistan, is called to the forthcoming industrial exhibition at Kabul, which will be held during the Independence Celebrations in August next, when Afghans from all over the country visit the capital.

The organisation of the exhibition has been entrusted by the Royal Afghan Government to the Afghan National Bank and the following particulars are offered:—

(1) The Bank will pay the freight from Peshawar to Kabul on all goods imported for the exhibition, and in the event of the goods being re-exported after the Exhibition, the Bank will pay the return freight.

(2) Insurance against loss and theft in the Afghan territory will be borne by the Bank, but no guarantee will be given against damages and/or fire risk.

(3) Exemption from duty is granted up to 50 pieces, 50 pair or 50 units, on goods sold. Goods sold by weight are exempted up to 20 kilograms, while cloth, linen, etc., is exempted up to 100 metres. All goods which are sold above these limits are subject to Afghan customs duty, but goods which remain unsold can be re-exported without paying duty.

(4) No charge will be made for a stand in the exhibition premises.

(5) Interpreters will be available. The Bank declares its readiness to negotiate with merchants or manufacturers likely to be interested in the Exhibition.

(6) Application for participation in the Exhibition must be received by the Bank on or before 15th June 1934, and should clearly indicate the name of the Exhibitor, quantity and kind of goods.

The Bank suggests that the following lines would be of interest to the people of Afghanistan but any other manufacturer may participate:—

Light motor lorries, all kinds of woollen cloth, cotton cloth, silk, hosiery, sports outfits, stationery, office equipment, hardware, glassware, crockery, paints and colours, leather goods, household articles, bicycles, watches, sewing machines and small hand-operated machinery. The textile and canning industries are also considered to be of interest.

It is considered that participation in the Exhibition should give British firms an excellent opportunity of obtaining a larger share in the trade of Afghanistan and it is hoped that the question will be taken up with vigour by the Indian branches and agencies of United Kingdom firms.

Any further particulars which may be required should be obtained direct through the Afghan National Bank, Kabul, Telegraphic Address—"Asham".

REGULATIONS APPLICABLE TO COMMERCIAL TRAVELLERS IN INDIA.

A supplement to the Commercial Bulletin was issued in May 1933 containing the above regulations. The following amendment should now be made in that supplement:—

On page 13, paragraph 7 (A) (h) (iii)—*Delete the entry relating to North Western Railway and insert—N. S.—2nd—local booking—after the last entry relating to South Indian Railway.*

GENERAL.

The latest Trade returns reveal that the position of United Kingdom exports and imports was more satisfactory in March than at any other time during the past three years.

For the first quarter of the year, compared with 1933, imports totalled £183,844,560, an increase of £24,690,798, and exports (including re-exports) totalled £109,624,668, an increase of £7,297,225.

Although March 1934 contained one working day fewer than March last year, total imports rose by £5,618,000 or 9.9 per cent. of which no less than £4,091,000 took place in raw materials, every section in that group showing increased values.

There was also an increase of £518,000 or 1.5 per cent. in United Kingdom exports. Re-exports rose sharply by £1,648,000 or 41.8 per cent. and this was also largely due to an expansion in raw materials. Compared with March, 1933, exports of food, etc., rose by £94,000, raw materials by £212,000 and manufactured goods by £212,000. The principal rise was shown in the following trades:—Iron—steel and non-ferrous metals—wool—woollens and worsteds—chemicals—motor-cars and parts.

An interesting feature of the returns is the huge increase in the export of spirits to the United States since the repeal of prohibition. For the first quarter of the year this totalled 814,628 gallons compared with only 1,067 gallons in the corresponding quarter of 1933.

Further indications of the revival in trade are provided by the figures of employment. The Ministry of Labour estimates that there were approximately 10,058,000 insured persons aged 16-64 in employment in the United Kingdom on 19th March, 1934. This was 117,000 more than a month ago and 644,000 more than a year ago, the total almost reaching the 1929 level. The decrease in unemployment was most marked in the following trades:—building, tailoring, docks and harbour service, motor vehicles, cycles and aircraft, metal goods, general engineering and iron and steel manufacture.

BRITISH INDUSTRIES FAIR DATE CHANGE.

The Birmingham Section of the British Industries Fair, 1935, will be held from 20th May to 31st May inclusive. The London Section will, as formerly, open on the third Monday in February, i.e., 18th February, 1935.

This decision follows a recommendation of an "ad hoc" Committee of representatives of the London and Birmingham Sections of the Fair.

ROYAL AGRICULTURAL SHOW, IPSWICH.

The 93rd Annual Show of the Royal Agricultural Society of England will be held at Ipswich, from the 3rd to the 7th July, 1934.

This will be the first time that the Royal Agricultural Show has been held at Ipswich, and one of the few occasions when it has been held in East Anglia.

The showyard, over 90 acres in extent, exclusive of the motor parks, etc., will be extremely well filled by exhibitors of all kinds of agricultural machinery, implements, seeds, fertilizers, animal medicines, rural industries, etc.

The showyard is situated on the main London—Colchester road, some two miles outside Ipswich, and is, consequently, within easy motoring distance from London. Special services of trains will be run daily by the London and North Eastern Railway, so that a visitor staying in London may leave Liverpool Street at a reasonable time in the morning, spend a day at the show, and be back in the metropolis in the early evening.

The Implement and Machinery section has exceeded the area originally allocated to it and will be fully representative of all kinds of agricultural machines and implements. It will introduce to the public the latest power-operated devices for use on the Farm.

The Ipswich Corporation and the Electric Power Supply Companies in East Anglia will also have a unique display showing the application of electricity to agriculture and rural industries.

The Live Stock section will be particularly interesting this year. Apart from a very extended classification of all breeds of pedigree horses, cattle, sheep, and pigs, a unique display is anticipated of the three breeds whose home is in East Anglia, *viz.*:—the Suffolk Horse, Red Poll Cattle, and the Suffolk Sheep.

One great feature at each Annual Show is the daily Cattle Parade. The United Kingdom is still the stud farm of the world and nowhere else can such a display of stock be seen.

Agricultural produce, such as butter, cheese, wool, cider, etc., likewise small animals such as goats, and poultry, all have their place. The Poultry section has

been brought up to date this year by the addition of a Single Pen Egg-Laying Competition. This Competition, limited to 100 birds of various breeds, has been proceeding since October last, and the full records showing the egg production of each bird will be posted on the pens throughout the show.

At the working dairy may be seen each day not only demonstrations but competitions for buttermakers from all parts of the country. A special Dairy Implement and Appliance section will be found in close proximity to the working dairy organised by the Milk Marketing Board.

The lighter side of the show will be the Horse Jumping and a Musical Ride and Trick Riding Display of the Royal Horse Guards. The Band of that Regiment will play during the Show.

The official visit of H.R.H. The Prince of Wales has been fixed for Wednesday, the 4th July.

INTERNATIONAL BICYCLE AND MOTOR CYCLE SHOW, 1934.

The Nineteenth Bicycle and Motor Cycle Show will be open at Olympia, London, W., from Monday, 5th November, 1934, to Saturday, 10th November, 1934, inclusive.

In addition to Bicycles and Motor Cycles with components and accessories there will be exhibits of such goods as Camping and Hiking Equipment and Sportmen's requisites.

CIGARETTE PAPER BOOKLETS.

Until recent times cigarette paper booklets, for which a large demand exists, have been made principally abroad, there having been little or no production in the United Kingdom. It is, therefore, of considerable interest to record that the well-known firm of paper manufacturers, Robert Fletcher and Son, Ltd., Kearsley Paper Works, Stoneclough, near Manchester, have now commenced the production of these booklets made up from paper of their own manufacture. It is claimed that the cigarette paper used is of a superior quality, very thin, and that it contains no injurious chemicals.

For the home trade the booklets are packed in display boxes of fifty, retailing at one penny per booklet. They

are therefore competitive in price with booklets of foreign production. The firm state that they have already been thoroughly tested against competitive booklets and found to be in every way satisfactory.

It is stated that the machinery and equipment installed for the production of these booklets is adequate for home trade and export, and Robert Fletcher and Son, Ltd., will be glad to receive inquiries from overseas markets.

DEVICE TO WEIGH AND SORT TINPLATES.

A Gorseinon (West Wales) works electrical engineer has invented a weighing and sorting machine which it is claimed will be of great importance to a branch of the tinplate industry in South Wales.

The machine, which weighs and sorts tinplate sheets automatically, can be carried by two persons.

Sheets within a specified weight are sorted to the first stand, those under weight to a second stand, and those over weight to a third. There is a pan to hold the sheets, a guide to direct them to their respective stands, a counterpoise weight which can be moved to any weight of sheet on the graduated beam, and a percentage indicator.

The machine can be connected with the sheet-cleaning machine in the tin house, and driven by the cleaning machine power or a small $\frac{1}{8}$ h.p. motor. It can also be fixed in the sorting room if needed on the basis of one machine per sorter.

WIRE FINER THAN HAIR.

Finer than a human hair, wire is now being manufactured at the Prescott (Lancashire) Works of British Insulated Cables, Ltd., which has a diameter of two-thousandths of an inch. It requires fifteen and a half miles of this wire to weigh a pound.

Special machinery has lately been installed to make this wire and further machinery to coat it with an electrical insulation of enamel, five coats of which have a radial thickness of only two ten-thousandths of an inch.

THE WORLD'S GREATEST TUNNEL.

The construction of the world's greatest under-water tunnel from Liverpool to Birkenhead is now nearing

completion. Work on it was begun in 1925, and since then an army of men has laboured almost incessantly at what is certainly one of the greatest engineering feats ever undertaken. This new Mersey tunnel links up four districts with a total population of about a million and a quarter. It is over two miles long and will cost over £7 million.

There are two entrances on each side of the River Mersey, and the tunnel goes down to a depth of 170 feet. Ventilation presented a very difficult problem, in view of the fact that most of the traffic would consist of motor vehicles. Six ventilating plants have been erected, three on each side of the river. Each consists of a number of great fans connected with the tunnel by vertical shafts and horizontal air ducts. Fresh air is blown through a main duct below the roadway, and the impure air is drawn from the top of the tunnel. It is estimated that the capacity of the tunnel to deal with traffic will reach 4,150 cars an hour, with four lines of cars spaced 100 feet apart and moving at 20 miles an hour. At present the motor traffic has to be ferried across the Mersey. It is fully evident how great will be the saving to the public of both time and money, when it is realised that the ferries take 15-20 minutes, and a car will be able to pass through the tunnel in 6½ minutes. The new tunnel will be formally opened by H.M. The King in July this year.

NEW VERTICAL LIFT BRIDGE.

Four great new bridges have recently been constructed in the United Kingdom, of which the latest and in many respects the most interesting is the vertical lift bridge spanning the River Tees, which was opened on the 28th of February by H.R.H. the Duke of York. This is the only bridge of its kind in the United Kingdom crossing a navigable river near its mouth. It forms a 38 feet wide roadway, 20 feet above high water level, but when shipping is passing, the whole roadway is raised by weights suspended by 160 steel ropes attached to the ends of the bridge and passing over sheaves at the top of the 170 feet high towers on either bank. The motion is similar to that of an ordinary sash window, yet the weight of the bridge is 2,700 tons, and as the counter weights are of equal weight there is a strain of 5,400 tons on the bearings of the sheaves in the towers.

The height to which the bridge lifts is 99 feet; the rise takes only one and a half minutes, and the fall the same time. The width of the bridge is 270 feet that is, about 70 feet wider than the clear way between the piers of the Tower Bridge in London. There are three alternative methods of lifts available, and even at the first test the lifting machinery worked perfectly. First the main electrical machinery lifted the bridge, and brought it to stop at various heights; then a reserve motor engine achieved the same effect; finally three men working on ordinary hand-pulleys did the same thing, each method demonstrating how well balanced is the centre section. On one side a new five-span approach bridge 1,200 yards long had to be built. This approach bridge has the distinction of being the first United Kingdom bridge built without a rivet in it, its parts being electrically welded together throughout.

DEVELOPMENT OF TELEVISION.

Great progress has been made in the development of television in the United Kingdom. The Baird Television Co. now claims that the stage has been reached where a regular service can be instituted.

In the course of a recent interview a director of the Baird Television Co. stated that films, speeches and songs can be transmitted from the Crystal Palace, on the outskirts of London, for reception anywhere in the Greater London area, "with the subject of the transmission shown up with astounding clearness". This statement was followed by a demonstration which, in the opinion of those present, completely justified the claim. The pictures were remarkably clear, steady and free from flicker. By means of a "home set" which has been produced by the company, shopping methods of the future were shown. A mannequin demonstrated several types of women's hats and a man exhibited men's scarves, lampshades and furnishing materials and gave their audiences at the same time details of the goods. Particulars of the price of a home television set are not yet available—£50 has been mentioned as the approximate figure—but when once the new method is established the demand will probably be enormous with a consequent reduction in the price. The Baird Television Co. believe that within two years they will be able to transmit every theatrical first night, and by means of the intermediate

film method they can now broadcast such outdoor events as the Grand National horserace.

CONTRACTS SECURED.

Railway Orders secured for the United Kingdom.

The South African Railways have recently placed an order for fifty locomotives with the North British Locomotive Co., Ltd., of Glasgow. This contract, the value of which is £300,000, was secured by the United Kingdom firm in face of keen competition from many Continental and American firms.

Braking apparatus to the value of £5,000,000 for the Polish railways, has been ordered in the United Kingdom, a large portion of which will be supplied by the Westinghouse Brake Company.

17,000 tons of rails for the Chinese railways, to be manufactured by Dorman Long & Co., Ltd., and the Cargo Fleet Iron Co., Ltd.

Railway tools for the Canton-Hankow railway. The value of this contract is reported to be £20,000.

Steam rail cars for the Belgian National Railways to be built by the Sentinel-Cammell-Laird Co., Ltd.

Five locomotives for the Persian State Railways to be built at the Lancashire works of Beyer Peacock & Co., Ltd.

Order for Greek Navy.

Tubes Limited have secured an order for the supply of cold drawn weldless steel tubes to the value of approximately £6,000 for the Ministry of Marine. This contract is of particular interest as these tubes are for use in French made boilers and have hitherto been supplied by French firms.

Orders for Oil Engines.

Messrs. Ruston & Hornsby, Ltd., Lincoln, have secured the following oil-engine orders. Four eight-cylinder 600 b.h.p. engines for the Canton Government cotton mill and a 300 b.h.p. engine for electric-lighting duty in the Rajpipla State.

Scandinavian Coal Orders.

It is understood that the Danish State Railways have allocated contracts for locomotive coal as follows:—

60,000 tons to Scotland; 20,000 tons to South Wales; and 10,000 tons to Broomhill, Northumberland.

It is reported that the Vesteras Railways of Sweden have placed orders for 20,000 tons of Durham locomotive coal.

Dorman, Long & Co., Ltd., Middlesbrough, have secured a £125,000 contract for the construction of the Birchenough Bridge over the Sabi River in Africa.

Egyptian Government Contracts.

H. J. Skelton & Co., Ltd., London.	Steel Joists. £930.
Ericsson Telephones, Ltd., Lon- don.	} £1,490. Switchboards. £2,550.
Standard Telephones & Cables, Ltd., London.	
Siemens Bros. & Co., Ltd., London.	Automatic Telephone sets. £7,950.
Primary Batteries, Ltd., London	Battery materials. £1,400.
P. & W. MacLellan, Ltd., Glas- gow.	Copper ingots. £1,350.
Stanton Iron Works Co., Ltd.	Cast iron pipes. £3,000.

Order from 'Iraq.

William Simons and Co., Ltd., Renfrew, have received an order from the Basrah Port Directorate through the Crown Agents for the Colonies for a large and powerful twin-screw suction hopper dredger, designed for taking its load while being steamed slowly ahead. The dredger will be over 300 ft. in length, arranged for dredging to a depth of 45 ft.; she will be specially designed to discharge her load either into the hopper or over the side through pipes for land reclamation purposes. The propelling machinery will consist of two sets of triple-expansion surface condensing

engines supplied with steam from three boilers. The dredging pump will be driven by an independent set of engines also of the triple-expansion surface condensing type.

FINANCE.

NEW COMPANIES.

New Rudge-Whitworth Company's £200,000 capital.

The title of the new Rudge-Whitworth Company is "Successors to Rudge-Whitworth" and the issue capital will consist of £200,000, divided into 400,000 ordinary shares of 10s each. The company will carry on the business of manufacturers of motor-cars and conveyances of all kinds and adopt an agreement with the Constructive Finance and Investment Company.

The directors are Mr. Edward de Stein, Sir Herbert E. Blain and Mr. Frank G. Woollaid.

INCREASES IN CAPITAL.

Improved Metallurgy, Ltd	£350,000
Croydon Mouldrite Ltd. (Vulcanite manufacturers)	£100,000
Associated Chocolate Manufacturers, Ltd.	£75,000
Universal Furniture Products (Wembley) Ltd.	£100,000

THE IRON AND STEEL INDUSTRY IN THE UNITED KINGDOM.

REVISED CONSTITUTION.

A Special General Meeting of the National Federation of Iron and Steel Manufacturers was held on April 19th, at which the Revised Constitution was adopted by a majority of nearly four to one of those present and voting. In future the Federation will be known as the **BRITISH IRON AND STEEL FEDERATION**.

In addition a further Resolution was passed *nem. con.* instructing the Council and Executive Committee, to be appointed under the Revised Constitution, to give their

earnest attention forthwith to the measures to be taken in collaboration with associations in the industry:—

- (1) To promote the maximum manufacturing and commercial efficiency throughout the industry.
- (2) To expand the export trade in iron and steel products; and
- (3) To obtain the affiliation of associations.

In a statement after the meeting the President of the Federation said that he considered that this was the most important step which the industry collectively had taken in its history, and that the resolutions which the meeting had passed were sufficiently indicative of the spirit and determination of the industry to make the instrument which had been created an effective means of consolidating the progress which had characterised the past year.

PRESENT POSITION OF THE INDUSTRY.

The rate of operations in the iron and steel industry in the United Kingdom continues to show an upward trend. The improvement extends to all the principal producing areas in the country and an active demand from the major domestic steel consuming trades is the dominating feature. Export trade is still irregular and disappointing, although there have recently been some indications of greater activity.

At the present time the steel industry is operating at a level equal to approximately 80 per cent. of its estimated productive capacity, which is higher than in any other steel producing country in the world where reliable statistics are available, and is higher than at any time in the United Kingdom since 1929. The total output of crude steel in March amounted to 829,700 tons compared with 707,500 tons in February and 577,700 tons in March of last year. In the first quarter of this year steel output totalled approximately 2,250,000 tons, against 1,500,000 tons in the corresponding period of 1933.

During March there was a net increase of five in the furnaces in blast, the number blowing at the end of the month being 95 compared with 70 at the end of March last year. Production of pig iron in March totalled 503,600 tons against 414,400 tons in February and 332,200 tons in March, 1933.

Although showing a slight decline when compared with February (123,300 tons), imports of iron and steel in March, at 121,600 tons, were still at a high level and were substantially in excess of the imports in March, 1933 (97,000 tons). During the first quarter of 1934 imports totalled 365,000 tons, compared with 245,000 tons in the first quarter of last year, thus showing an increase of the order of 50 per cent.

As already pointed out export trade leaves much to be desired, but the March figures were moderately encouraging. The successive declines in exports during the four preceding months were arrested and there was an appreciable gain compared with March of last year. Iron and steel exports in March, 1934, amounted to 171,500 tons against 142,000 tons in the preceding month, and 155,000 tons in the corresponding month of 1933.

An indication of a somewhat better outlook in international trade, notwithstanding the numerous barriers and restrictions which are in existence, is afforded by the reports of important orders secured by iron and steel firms in the United Kingdom. Among these may be mentioned two orders for rails from the Chinese Government purchasing Commission—10,000 tons for the Canton-Hankow Railway and 7,000 tons for the Shantung Railway—to be delivered at Hankow not later than June. An order for 2,500 tons of rails has also been placed by South Africa. Arrangements have been made between Arcos Ltd., acting on behalf of the U.S.S.R. and the group which comprises practically all the British tube manufacturers, for the shipment to Russia within six months of 20,000 tons of steel tubes, valued at from £400/500,000. These steel tubes are required primarily for aircraft, railway and steel-works purposes, and also for general engineering. In addition an option has been agreed upon by the parties concerned for further deliveries of British steel tubes in approximately the same quantities, and this may be exercised on completion of the present contract. In the home market the London and North Eastern Railway has recently placed contracts with United Kingdom steelmakers for a total of 37,000 tons of steel rails.

The present position of the iron and steel industry in the United Kingdom is more encouraging than for a long time past and the outlook may be regarded with reasoned optimism. Important schemes within the in-

dustry involving new capital expenditure on a substantial scale include, *inter alia*, the large developments for which Messrs. Stewarts & Lloyds are responsible at Corby: the proposed reconstruction of the Dowlais (South Wales) works of the British (Guest Keen Baldwins) Iron and Steel Company: the reorganisation of the Vickers Works (Sheffield) of the English Steel Corporation: the development of the Irlam works of the Lancashire Steel Corporation: and the construction of a new electric steel plant at the Stocksbridge works of Samuel Fox & Co., which is one of the United Steel Companies groups. These and other similar schemes testify, on the one hand, to the determination of the industry to maintain its efficiency and competitive power at the highest possible level, and, on the other, to the confidence felt by those concerned in the industry in the prospects of its development in the future.

MACHINE TOOLS.

Greenwood & Batley Limited, Albion Works, Leeds, have introduced an automatic bolt head trimming machine which has been designed for stripping the hexagon or cheese head formed on the cold-heading machine, being arranged with a hopper feed, and having provision for hand feeding when the blanks are too long for the hopper mechanism. When using the hand feed the hopper is disconnected and the blanks are fed by hand into the inclined chute. At this stage the operation becomes entirely automatic, the blanks feeding into a drawer from which they are picked out one at a time, by a finger mechanism, and placed between the tools, whence they are automatically ejected on completion of the operation.

The main frame is of close-grained cast iron and bored to receive the heat-treated nickel-chrome steel crankshaft. The flywheel is of the friction slip type, the drive to the crankshaft being through friction discs. The construction of the tools is such that the head is squeezed between the hexagon tools (punch and die). When the crankshaft is on the dead centre, a kicker mechanism comes into operation and kicks the bolt through the die. This method reduces the tendency to produce a rough face on the flats, as is the case when the head is trimmed through the die only. The tools are readily accessible and provision is made for adjustment in all directions.

The hopper is fully automatic. The blanks are thrown into a pan at the rear, whence they are automatically transferred down an inclined guide-way to the drawer and finger mechanism. The hopper is self-contained with the machine, being driven from a pulley at the end of the crankshaft.

The machine will trim the heads of 3,600 bolts per hour, having $\frac{3}{8}$ -inch diameter shanks, up to $4\frac{1}{2}$ inches long. The approximate weight is 2 tons and $4\frac{1}{5}$ horsepower is required for driving. A larger machine weighing 4 tons is also made for dealing with 3,300 blanks per hour for $\frac{1}{2}$ -inch diameter bolts.

H. W. Ward & Co., Ltd., Selly Oak, Birmingham, are busy on combination turret and capstan lathes and have found it necessary to run a night shift in order to keep pace with the present demand.

William Asquith Ltd., High Road Well Works, Halifax, have recently experienced a brisk demand for standard radial and vertical drilling machines. Duplex horizontal boring and drilling machines are on order at the present time for both home and Continental shipyards. A batch of four 12' 6" radius girder-type radials for the Continent are nearing completion. Orders have recently been received from France, Denmark and South America.

F. Town & Sons, Mile Cross Works, Halifax, are well occupied with drilling machine orders including standard and girder type radials and box-body vertical drilling machines. A batch of vertical-cylinder re boring machines is in progress with a number of crank type shaping machines.

A NEW SHEET METAL FLANGING MACHINE.

An ingenious machine has been recently devised for producing flanges on sheet metal blanks, whether the edge is irregular, straight or domed. Metal up to $\frac{1}{8}$ " can be flanged up to a maximum height of $1\frac{1}{2}$ " with no appreciable displacement of metal.

The work is hand fed under a holding-down tool and lightly pressed against an arc-shaped guide, the radius of the arc being equal to the desired height of flange.

The bending is accomplished by a power-driven oscillating head, the holding-down tool and guide pro-

viding the forming surface against which the flange is shaped and finished.

The only requisites for the forming of a flange of definite shape and height are a matched holding-down tool and bending head. Six sets of standard matchings are supplied with the machine.

The angular movement of the bending head is controlled by a hand wheel at the front of the machine. A self-contained electric motor of 1 h.p. is fitted for any required voltage and three hanging speeds are provided. All gearing is below the table and fully enclosed.

The machine has already found considerable favour among United Kingdom aircraft and motor-body builders for operation on duralumin, stainless steel and other metals.

Further particulars can be obtained from the Selson Machine Tool Company, Limited, 23, Abbey House Victoria Street, London, S.W. 1.

SHIPBUILDING.

Lloyd's Register Shipbuilding Returns for the quarter ended 31st March, 1934, show that in Great Britain and Ireland there is an increase of nearly 150,000 tons in the merchant tonnage under construction as compared with that in hand for the previous quarter, and that the present total of 481,440 tons is 229,039 tons greater than the tonnage under construction twelve months ago. The figures for the three quarters referred to are:—

<i>31st March, 1931.</i>		<i>31st December, 1933.</i>		<i>31st March, 1933.</i>	
<i>Number of vessels.</i>	<i>Gross Tonnage.</i>	<i>No.</i>	<i>Gross Tonnage.</i>	<i>No.</i>	<i>Gross Tonnage.</i>
107	481,440	90	331,541	68	252,401

At the end of March the tonnage on which work was suspended amounted to 144,972 tons. This figure, however, includes the 73,000 ton Cunarder on which work has since been resumed.

Nationality of Vessels under Construction.

<i>Country for which intended.</i>	<i>No.</i>	<i>Gross Tonnage.</i>	<i>Country for which intended.</i>	<i>No.</i>	<i>Gross Tonnage.</i>
Great Britain and Ireland	76	382,034	Mexico	2	3,456
British Dominions	8	25,950	Yugoslavia	1	400
Argentina	1	3,800	Country not stated, or For Sale	15	52,000
China	4	13,800			
			Total	107	481,440

The tonnage under construction abroad, *viz.*, 597,731 tons is about 172,000 in excess of the work which was in hand abroad at the end of December, 1933, and is the highest quarterly total recorded since September, 1932.

Of the total tonnage under construction in the world (excluding Russia)—1,079,171 tons, 44·6 per cent. is being built in Great Britain and Ireland and 55·4 per cent. abroad. The five leading countries abroad are—Japan, 122,590 tons; France, 103,188 tons; Germany, 82,650 tons; Holland, 51,315 tons; and Denmark, 51,140 tons.

Tonnage Commenced and Launched.

203,012 tons were commenced in Great Britain and Ireland during the first three months of this year—an increase of 128,311 tons over the corresponding figure for the previous quarter.

During the March quarter 34,839 tons were launched in Great Britain and Ireland—a decrease of 30,435 tons as compared with the December quarter. Similar figures for the rest of the world (excluding Russia) are 258,048 tons commenced, and 51,263 tons launched, showing an increase compared with the previous quarter of 188,088 tons in the tonnage commenced, and a decrease of 58,401 in the tonnage launched.

THE LARGEST SHIP IN THE WORLD.

The financial and economic recovery which has taken place in England in the last three years, finally demonstrated by the Budget surplus of £29 millions, has justified the Cunard Company in a decision to complete the great liner which they had laid down. Work on this ship was abandoned in December, 1931, as it was considered that the general state of trade on both sides of the Atlantic would not enable so great a vessel to show a profit. But now the company feel that work may proceed and, in the first week of April, the great hull was once again covered with a host of busy workers.

The new Cunarder will be of 73,000 tons: and the length will be over one thousand feet. Power will be provided by four giant turbines worked by steam from twenty-seven oil-fired boilers. This vessel will carry the biggest rudder ever made, weighing no less than one

hundred and forty tons. While operations were suspended on the great hull, care was taken to paint it in order to avoid corrosion, and it is now reported to be in excellent condition. It is expected that the vessel will take the water next autumn, but the exact date of its first voyage cannot at present be stated. There is no doubt but that, for speed, comfort and safety, it will be the finest ship afloat - a masterpiece of shipbuilding.

AUTOMOBILE AND ALLIED TRADES.

The Search for Silence.

The never-ending war against noise which is carried on by United Kingdom Vehicle Manufacturers, has recently been developed a stage further in the Daimler Works by the erection of two silence rooms.

Thick, brick-built walls and massive sound-proof doors isolate the silence rooms from the noise of the factory. In each room there is a car, complete except for engine and gear-box, and with its rear wheels coupled up to water-brakes. Every 10 and 15 h.p. engine produced is fitted into one or other of these cars and must pass its silence tests before being transferred to the assembly line. Whereas on the road a tester can only report noise in some indeterminate part of an engine, in the silence room undue noise or vibration is not only more pronounced, but can be located quickly and exactly. The engine is run at a speed equivalent to 60 m.p.h. under load, and engineers with stethoscopes assure themselves that each component is doing its work in uncomplaining silence. Loads can be imposed to represent road gradients and the least suspicion of body drumming can be traced to its source. Even the spiral oil-pump gears are tested for silence on a separate machine, and in addition there are "no Smoking" tests at the exhaust outlet, after the engine has been idling for five minutes.

From a production point of view the silence rooms have proved amazingly efficient. Under the old system it was found that 10 per cent. of the parts capable of contributing to noise were rejected on the initial road test, whilst under the new system only $\frac{1}{2}$ per cent. is rejected on the same test. This means that whereas previously 20 complete cars might be held back for

attention, there is now only one. The resulting even flow of production is more economical and the cars themselves attain nearer to a standard of perfection.

FASTEST CARS IN THE WORLD.

Although United Kingdom car manufacturers have not shown much activity of late so far as new designs for super-speed cars are concerned, there is still reason for congratulation. The three fastest cars in the world were made in the United Kingdom. They are Sir Malcolm Campbell's "Blue Bird", Kaye Don's "Silver Bullet", and John Cobb's Napier Railton car. At the other end of the scale the international speed record for cars of between 750 and 1,000 c.c. capacity is held by the small United Kingdom "M.G.".

There are, however, now signs of greater interest and activity among the United Kingdom "speed kings". Sir Malcolm Campbell has announced that he is going this summer to a dried-up river bed in the State of Utah in the United States of America with a new "Blue Bird" to make an attempt on the 300 miles an hour run, which he is so anxious to achieve. Meanwhile his existing record of 272 miles an hour, gained at Daytona a year ago, still holds the field. Mr. Kaye Don's "Silver Bullet" is now being overhauled and re-conditioned for an attack on the United Kingdom mile record at Southport. This record also is at present held by Sir Malcolm Campbell, who won it at Verneuk Pan in South Africa in 1929. John Cobb's ambition is to win the twenty-four hour record. He found his Napier Railton 500 horse-power car fast enough last year, but his tyres could not stand the strain. He believes he has now solved the tyre problem. We may therefore feel assured that United Kingdom racing motorists are not merely resting on laurels already won; they are definitely surveying fields for further struggles and are determined to win more honours for the United Kingdom motor-car industry.

CHEMICALS.

COMMERCIAL PRODUCTION OF HEAVY WATER.

The recently discovered "Heavy Water", which has created so much interest in popular as well as scientific circles, is to be produced commercially in England.

This is the significance of the announcement by Imperial Chemical Industries, Ltd., that "as a result of research at the Billingham factory, the recently discovered isotope of hydrogen is now to be made available to purchasers in the form of its oxide, 'Heavy Water' ". Plant has been developed at Billingham capable of producing a continuous supply of "Heavy Water" of approximately 30 per cent. purity at the rate of 5 gms. per day, while approximately pure "Heavy Water" will be produced at a somewhat later date. Imperial Chemical Industries anticipate that they will be able to meet any commercial demand that may arise.

Production and Research at Billingham.

Large-scale production of "Heavy Water" is only possible where exceptional resources of power and raw materials exist together. At Billingham, not only ordinary hydrogen in large quantities, but also residues in which "Heavy Water" has accumulated, are readily available. These resources, together with cheap power and convenient research facilities, establish Billingham as the logical centre for the large scale production of the new compound. Since its discovery in America, its probable uses are becoming more evident, and it is eloquent testimony to the vitality of United Kingdom chemical technique that in so short a space of time it should have translated from a scientific curiosity to a marketable commodity.

Properties of Heavy Hydrogen.

The discovery that a different kind of hydrogen of twice the normal mass is always present in preparations of ordinary hydrogen has brought about a revolutionary change in beliefs in the constancy of the constitution of water—beliefs which scientific men have held for more than a century. The heavier isotope exists only in small proportion (about 1 in 6,000) but preparations of water in which the hydrogen isotope of mass 1 is replaced by the isotope of mass 2 can now be obtained. The density of this water is found to be about 10 per cent. greater than that of ordinary water, and though in no way differing from ordinary water in outward appearance, certain of its physical and chemical properties show marked differences. Thus, its freezing point is 3.8°C. , its boiling point is 103°C. , and its

refractive index is notably lower than that of ordinary water.

It was discovered that the residual water in old electrolytic cells contained a larger proportion of heavy hydrogen than the normal. It was further found that by continued electrolysis, the concentration of the "Heavy Water" was enriched, ordinary light hydrogen being given off preferentially and "Heavy Water" accumulating. This gave the key to a successful method of preparing "Heavy Water" in quantity, and the electrolytic method is the one in use at Billingham.

Although "Heavy Water" occurs in all ordinary water to the extent of only 1 to 6,000, yet, because of the enormous quantities of water present on the earth, it cannot be regarded as a rarity. Because of its higher boiling-point, it is selectively retained on evaporation of ordinary water, and terrestrial sources vary in their content of "Heavy Water". Rain water will obviously be weakest in it, ordinary river and lake water contains 1 part in 6,500, sea water 1 part in 5,000, while certain electrolytic residues have been found to contain as much as 1 part in 2,700. All these facts will be utilised in large scale production, in which preliminary concentration is desirable.

The name "Diplogen" has been proposed by Lord Rutherford for Heavy Hydrogen, and this is the one most likely to be generally accepted. Chemically, so far as at present investigated, the new isotope shows less reactivity than ordinary hydrogen, though differences are not noticeable at temperatures above 500° C. It is interesting to note that some salts are as much as 15 per cent. less soluble in "Heavy Water" than in ordinary water.

Physiological Effects.

Mention must be made of the biological behaviour of "Heavy Water". Since water plays so important a part in life-processes, and these must have become accustomed to the 1 part in 6,000 ratio of "Heavy Water", alteration of the balance to one side or the other must be expected to have definite effects. It has been shown, for example, that tobacco seeds will not germinate in nearly pure "Heavy Water", and only grow half as fast in 50 per cent. "Heavy Water" as in pure water. "Heavy Water" has also been shown to

be toxic in varying degrees to a variety of small organisms, such as tadpoles and protozoa.

Significance to Research and Possible Uses.

Now that reasonably constant supplies of "Heavy Water" are to be made available to the experimenter, research work may be expected to be greatly stimulated, with the possible result that the United Kingdom will become the centre of research in this entirely new field of knowledge.

Despite the slenderness of existing knowledge of the chemistry of Heavy Hydrogen, its potentialities are many, and it is likely to prove of as great practical importance as of scientific interest. Apart altogether from interest attaching to the individual behaviour of a new atom of such chemical importance, it is thought probable that it and its compounds will prove a versatile weapon in connection with many general problems. It will obviously increase the possibilities of isomerism in organic compounds, and the value of the "Diplon" (the nucleus of the Heavy Hydrogen atom) in effecting artificial atomic disintegration may be considerable. The therapeutic uses for the new element may prove important, and other fundamental lines of research are suggested by its observed effects on animal and plant life processes.

TEXTILES.

COTTON.

Activity in the cotton industry does not appear to have increased in March. The March export figures show a slight increase over February but this is probably due to the greater number of working days in the month. The tendency of American raw cotton prices to decline prompts would-be buyers to make offers which are too low to leave manufacturers any profit. The Bankhead Bill which has now been passed into law has had no effect in remedying this weakness, for its final form is less rigorous than was at first anticipated. Moreover, while attempts are made to reduce American supplies and raise American prices, the supplies of other cottons are increasing, and likely to increase still further, so that

any substantial rise in the prices of the raw material is generally held to be improbable.

As a result of this uncertainty and of attempts to force down prices, spinners, particularly of American yarns, have been hard pressed. None the less, at a meeting of the Royton spinners, who were the first to come to an agreement to eliminate price cutting, it was decided to prolong their arrangement, and it is suggested that a degree of sales supervision may be instituted.

Manufacturers have complained of weakness in prices, and although a good many transactions have taken place they have been in small quantities and on a low basis. It is expected that the legalization of wages agreements will have a healthy effect on prices.

The Straits have shown a little more activity than recently. Egypt and the Near East have enquired for bleachers, prints and finishing cloths. Prints, too, have been booked for West Africa. In the South American market, Chile and Colombia are reported to be prominent, and in Europe, Switzerland.

Trade with the Dominions continues to be satisfactory, especially in heavy goods and cloths with a large percentage of rayon.

The export figures for March, compared with those for February and for March, 1933, are as follows:—

	<i>Mar. 1934.</i>	<i>Feb. 1934.</i>	<i>Mar. 1933.</i>
<i>Cotton Yarns.</i>	<i>1,000 lbs.</i>	<i>1,000 lbs.</i>	<i>1,000 lbs.</i>
Unbleached . . .	10,606	10,025	11,205
Bleached . . .	1,301	1,281	1,568
	<i>1,000</i>	<i>1,000</i>	<i>1,000</i>
<i>Cotton Piece Goods.</i>	<i>sq. yds.</i>	<i>sq. yds.</i>	<i>sq. yds.</i>
Grey	31,905	31,916	38,141
Bleached	53,108	53,279	72,008
Printed	32,109	29,768	36,142
Piece-dyed	46,202	45,293	53,752
Yarn-dyed	6,703	7,931	9,809
Total piecegoods	170,027	618,187	209,825

LINEN.

The marketing season of Irish flax is now at an end; the amount on sale at recent markets was negligible and stocks are reported generally to have been cleared.

In yarn, prices are firm, and spinners are well employed. Exports of flax and hemp yarns for the month of March were valued at £80,990, as compared with £50,579 and £51,708 in March, 1933 and 1932 respectively.

Exports of piece-goods during March were valued at £400,391. This is the highest export figure for piece-goods in any month during the last three years. The comparable figures for March, 1933 and 1932, were £317,484 and £331,591.

The value of piece-goods exported to the United States of America during March was £201,484, as compared with £146,833 and £175,213 in March, 1933 and 1932 respectively. To Canada and Australia, the next most important markets, there were despatched piece-goods to the value of £25,692 and £23,947 respectively.

Exports of damask table linen were valued at £58,074 for the month, of which the share of the United States was £39,629.

Handkerchiefs were exported in March to the value of £21,683, as compared with £26,052 and £26,614 in March, 1933 and 1932 respectively. Of this export, shipments to the United States represented £7,236 and to Canada £5,077.

The value of imports of linen goods into the United Kingdom during March, 1934, was £31,101, as compared with £20,156 and £30,090 in March, 1933 and 1932 respectively.

The total values of exports of linen goods from the United Kingdom during March, 1934, 1933 and 1932, were respectively £578,824, £485,649 and £520,576.

Total exports of linen goods from the United Kingdom during the three months ended 31st March, 1934, 1933 and 1932, were respectively £1,507,147, £1,354,037 and £1,389,187.

The quantities of linen piece-goods exported during the same periods were 21,539,000; 19,773,000; and 19,462,000 square yards.

WOOL.

The export of wool textile semi-manufactures and piece goods showed a steady increase during the first quarter of this year compared with the January-March period of the two previous years. 12,429,000 lbs. of wool tops were exported up to the 31st of March this year compared with 11,761,000 lbs. in the first three months of 1933 and 11,488,000 lbs. in 1932. Germany was the best market with approximately 3½ millions lbs., followed by Canada with just over 2½ million lbs., and Sweden imported nearly 2 million lbs. of wool tops from the United Kingdom.

2,781,000 lbs. of worsted yarns were sent to Germany out of a total export in the first quarter of this year of just under 9 million lbs. This latter figure compares with 7,239,000 lbs. (1933) and 7,708,900 (1932). Larger weights of wollen and alpaca and mohair, etc., yarns were also exported up to the end of March last than during the first quarter of the two previous years. The export of fabrics of mohair and alpaca, however, declined considerably this year. The quantity of flannel exported during January-March was nearly twice as much as in the corresponding period of last year.

The export of woollen tissues during January-March of each of the last three years was as follows:—18,171,000 sq. yards (1934); 15,884,000 sq. yards (1933); 14,497,000 sq. yards (1932) of which the Empire markets took 7,703,000 sq. yards (1934); 6,056,000 sq. yards (1933); and 5,607,000 sq. yards (1932). South Africa, the Irish Free State and Canada were the three most important woollen markets this year, all of which showed substantial increases over 1933 and 1932, followed a long way behind by the Argentine, Denmark, United States of America, and the Netherlands.

The export of worsted tissues during the corresponding periods was:—10,047,000 sq. yards (1934); 8,842,000 sq. yards (1933); 8,102,000 sq. yards (1932); the quantities sent to Empire countries being 4,072,000 sq. yards (1934); 3,135,000 sq. yards (1933) and 2,868,000 sq. yards (1932).

Canada was easily the largest market for worsted tissues followed by Argentina and both countries show considerable increases in their imports from the United

Kingdom. South Africa and New Zealand are much improved markets of worsted piece goods whilst the increased exports of both woollens and worsteds to the United States of America is very noticeable.

The value of the exports of the wool textile group which includes blankets and rugs, felt and carpets in addition to the above amounted to £7,876,565 during the first quarter of 1934 compared with £6,506,431 during the same period of 1933 and £6,612,940 in 1932. The percentage of Empire trade (in value) has risen from approximately 29 per cent. in 1932 and just under 30 per cent. in 1933 to 32 per cent. in the first quarter of the present year.

PAPER.

Whilst conditions in the various sections of the paper industry tend to fluctuate the general tone is fairly good and there are indications of a steady improvement in demand.

Following are figures giving the value of the exports of paper and cardboard of all descriptions during the first quarter of 1934 with comparative figures for the corresponding periods in 1933 and 1932:—

Three months ended 31st March, 1934 . . . £1,486,956

Three months ended 31st March, 1933 . . . £1,462,849

Three months ended 31st March, 1932 . . . £1,600,234

The following statement gives details for the various sections of the industry:—

Section	Value of Exports		Increase	Decrease	Inc. or Dec. per cent over	
	1933	1934			1933	1932
	£	£	£	£	Inc.	Dec.
Newsprint in rolls .	164,070	236,176	-	72,106	-	30.6
Other printing paper	343,573	308,785	34,788	-	11.3	-
Writing paper in large sheets.	112,709	104,558	8,151	-	8.0	-
All other types .	866,001	813,030	52,971	-	6.6	-
Total .	1,486,956	1,462,849	24,107	-	1.6	-

The decrease in the value of the exports of newsprint in rolls which is recorded in the above table is mainly due to a decline in the shipments to Australia, the volume of trade with that market during 1934 having fallen as compared with 1933 by 93,833 cwts. of the value of £58,167.

The following table shows the distribution of exports of paper and cardboard of all types to the various

overseas markets for the first quarter of 1934 and comparative figures for the corresponding period in 1933: -

Market	Value of Exports.		Inc. or Dec.		Inc. or Dec. per cent. over 1933	
	1934.	1933.	Inc.	Dec.	Inc.	Dec.
	£	£	£	£		
Australia . . .	875,256	400,338	—	25,082	—	6.3
Irish Free State . .	163,858	139,904	23,954	—	17.1	—
India	113,724	133,077	10,047	—	7.5	—
South Africa . . .	136,656	122,391	14,265	—	11.6	—
New Zealand . . .	78,097	80,368	—	1,371	—	1.7
Canada	44,356	52,682	—	8,296	—	16.0
British Malaya . .	26,720	24,147	2,573	—	10.7	—
British West Africa .	16,768	18,876	—	2,108	—	11.2
Other British countries.	114,115	114,227	—	112	—	0.1
United States . . .	47,703	41,571	5,832	—	14.0	—
Netherlands . . .	40,471	40,052	419	—	1.0	—
France	42,852	43,958	—	1,506	—	3.4
Belgium	23,343	24,748	3,595	—	14.5	—
Argentina	20,822	24,459	—	3,637	—	14.9
China	18,612	18,400	212	—	1.1	—
Japan	13,820	18,627	—	4,798	—	26.0
Other foreign countries.	165,344	158,224	10,120	—	6.4	—
Total	1,486,956	1,462,549	24,107	—	1.6	—

POTTERY AND GLASSWARE.

There has been no change of importance in the Pottery industry during the past few weeks. The improved conditions noted in recent issues of the Commercial Bulletin have been maintained, and confidence exists that the demand will continue to expand.

Following are details of the exports of pottery for the first three months of 1934 together with comparative figures for the corresponding period of 1933.

Class.	Value of Exports.		Increase	
	1934.	1933.	Increase.	per cent. over 1933.
	£	£	£	
Tiles (all classes) . . .	50,018	46,540	3,478	7.5
Sanitaryware	146,290	139,572	6,718	4.8
Chinaware	50,034	39,283	10,751	27.4
Electrical ware	20,809	14,350	6,459	45.0
Earthenware of all other descriptions	339,278	321,314	17,964	5.6
Refractory goods not elsewhere specified . .	56,297	46,799	9,480	20.3
All other descriptions . .	15,355	16,830	975	6.0
			(dec.)	(dec.)
Total	678,563	624,688	53,875	8.6

GLASS AND GLASSWARE.

Following are details of the exports of glass and glassware for the first three months of 1934, together with comparative figures for the corresponding period of 1933.

<i>Class.</i>	<i>Value of Exports. 1934. £</i>	<i>1933. £</i>	<i>Increase. £</i>	<i>Increase per cent. over 1933</i>
Scientific glassware .	18,183	17,478	1,005	6.0
Domestic and fancy glassware	37,351	31,451	5,903	18.8
Plate and sheet glass .	174,112	162,183	12,229	7.5
Glass bottles and jars .	51,951	65,607	10,653 (dec.)	16.2 (dec.)
All other kinds of glass and glassware .	23,875	20,336	3,539	17.4
Total .	309,078	297,055	12,023	4.0

AVIATION.

ECONOMICAL AIR TRANSPORT.

Economy of operation without loss of performance is the keynote of the design of the new Avro 642 commercial monoplane, the first of which went into service last month on the air route, opened on April 6 by Midland and Scottish Air Ferries Ltd., between London and Liverpool.

The machine is a high-winged monoplane, built to carry a crew of two and sixteen passengers and baggage over a distance of 350 miles in still air at a cruising speed of 135 m.p.h. and at an all-in operational cost (including fuel, oil, salaries, replacements, insurance, depreciation, maintenance, overhauls, rents and landing fees) of one penny per passenger-mile, or, expressed from the point of view of transport of cargo, of one shilling per ton-mile.

This is performance which places the new air liner on a level with the most economical aircraft yet constructed; it will prove an important factor in determining whether or not many routes in the British Isles and elsewhere can be profitably worked.

The machine derives power from two Siddeley "Jaguar" 460 h.p. air-cooled radial engines. Four

Siddeley "Lynx" 215 h.p. engines may alternatively be installed, but the safety gained in certain kinds of operation of commercial flying by multiplication of the power units—for example, regular flying over long distances of open water—must be offset against reduction of cruising speed and payload. Other alternative engine installations comprise two Siddeley "Panther" 535 h.p. engines, or two Siddeley "Cheetah" 280/300 h.p. engines.

Powered with two "Jaguar" motors, the Avro 642 attains a maximum speed of 160 miles an hour at a height of 1,000 feet above sea-level. If the number of seats in the passenger cabin be reduced to twelve and the load made up with fuel the still-air range is increased from 350 to 620 miles. Fully laden to a weight of 11,800 lbs. the machine can climb to a "ceiling" of 17,500 feet. Though its maximum attainable speed must be considered high, in conjunction with the payload carried, the landing speed is relatively low at 65 m.p.h., an important factor in safe and regular operation of airline craft in territories where large landing grounds are rare.

Much attention was paid in design to securing the best possible streamline forms for all parts of the structure. Townend resistance-lessening rings encowl the engines, which themselves are carried in streamlined nacelles mounted in the leading edges of the wings. The fuselage is an excellent streamline form and the wings form a cantilever structure—that is, there are no external bracing struts or wires. If required the landing wheels can be fitted with streamlined cases, which should improve maximum attainable speed by approximately three miles an hour.

The kind of construction adopted for the machine—spruce and plywood wings and a fuselage built up of welded steel tubes—has been proved in many years of experience to be economical in maintenance, easy of repair, and long in life, even in extreme climatic conditions. Repairs are exceptionally simple. Repairs to the wooden wings present no difficulty to a skilled carpenter, and they can be done efficiently without expensive workshop equipment. Almost any kind of damage to the fuselage framework can be made good by welding, equipment for which is cheap and easily transported. Further good temporary repairs can be made when welding

equipment may not be immediately available. For all ordinary structural repairs, therefore, all that is needed is the raw materials and ordinary skilled labour.

The crew of two is accommodated in a roomy enclosed compartment in the nose of the fuselage, from which there is a magnificent outlook in all essential directions, through windows in front and in the sides and roof. Good view is also a feature of the passengers' cabin; the wings are above and there is nothing except the landing wheels and undercarriage struts to hinder vision sideways and downwards. Leather and cloth is the standard interior finish of the cabin, which has armchair seats arranged singly along each side, leaving a gangway in the middle. A pile carpet covers the floor and there are the usual ventilators and radiators, individually controlled by each passenger, reading lights, racks for light luggage and so forth.

In standard form with the two "Jaguar" engines, the Avro 642 costs approximately £8,500. Substitution of four "Lynx" motors increases the price to about £9,250. This means that the first cost of the standard machine may be expressed as £530 for each passenger seat. This is a reasonable figure, and, coupled with the extremely economic operating cost of the aeroplane, makes it an attractive proposition for the working of unsubsidized air transport companies in all parts of the world.

RESEARCH IN THE BRITISH FOOD AND CONFECTIONERY INDUSTRIES.

(Contributed by the British Association of Research for the Cocoa, Chocolate, Sugar, Confectionery and Jam Trades.)

In 1917 Parliament voted a grant with a view to encouraging scientific research in the industries of the United Kingdom. The basis of this scheme was that each group of industries should combine to set up a research organisation on co-operative lines. In 1919 the Manufacturing Confectioners' Alliance, in conjunction with the Jam Section of the Food Manufacturers' Federation, decided to take part in the scheme and a majority of the manufacturers bound themselves to support a research association for at least five years.

At the end of that time it had proved its value and has existed now for over 14 years.

Much of the research work undertaken in its earlier years dealt with defects occurring in manufactured goods as for example "bloom on chocolate" which was investigated. This bloom is a whitish film, resembling the bloom on grapes, which frequently developed on chocolate. Sometimes this occurred within a day or two after manufacture, and sometimes later. While it did not in any way represent a deterioration in the quality of the product it undoubtedly affected it seriously from the sales point of view, and quite frequently serious losses resulted.

Many efforts had previously been made to discover the cause of the defect but without success. The research staff, however, were able to ascertain the cause and to suggest relatively simple methods of preventing its occurrence. That this discovery is of value to the industry in overseas markets would seem to be proved by an article in an American Trade Journal in which the author stated:—

"We are endeavouring to do an export business in the Orient and South America, and have been convinced for some time that our English Competitor has something in the way of Chocolate that does not show bloom".

In the case of jams, investigations were carried out in connexion with the methods of manufacture with a view to producing jams which would not develop mould, fermentation or granulation. Any manufacturer, who adopts the principles laid down in the reports on this subject, should have no occasion to suffer from any of these defects, except in consequence of exceptionally bad storage conditions.

Similarly, defects in confectionery products were investigated. For example, the well known troubles met with in boiled goods, stickiness, and granulation were dealt with, and useful suggestions were made as to how these could be largely overcome. It is, of course, impossible to prevent the occurrence of these defects if the goods are exposed to a humid atmosphere, but it is now possible for manufacturers to make and pack these products so that they should reach the retailer in sound condition.

Another defect in these goods which was investigated was the tendency of certain types to soften and cohere without the influence of moisture. This occurred chiefly in the heat of summer or in hot climates. It was found that modifications in the composition of the product could largely obviate this trouble.

These are only a few of the problems connected with defects with which the Association has dealt, but are sufficient to give some idea of the value of research. Investigation of defects is, however, only one side of its work, though in the earlier days of its existence it proved most useful in stimulating the interest of many manufacturers who had given little thought to the advantage of the application of science to their own industries.

Industrial research, however, does not begin and end with the overcoming of defects. It is essential that the principles underlying manufacturing processes should be understood. In industries such as those which have been developed gradually by experience it has been necessary to examine these processes in detail to bring out the various chemical and physical principles involved. In some cases where processes have been investigated it has been shown that when once the principles are known, the process can be modified in various ways to meet certain conditions or to modify the product itself. The crystallisation of confectionery such as fondants is a case in point. It is generally found that in individual factories a certain procedure is invariably adopted, but this may be different in other factories. As a rule a manufacturer accustomed to one procedure is afraid to vary it because he has found by experience that bad results may follow. When the process of crystallisation was examined it was found that it could be modified widely, provided that certain principles were observed.

Further fundamental work which is now being carried out is the investigation of the chemical and physical properties of such raw materials of the industry as gelatin, starch, gum, etc. When this work is completed it will be possible to investigate the processes in which these are used and to show how these properties can best be made use of in manufacturing the various products. It is already known, for example, that one type of commercial gelatin may be quite suitable for the manufacture of one product, but not so suitable for another.

Further, it is found to be possible to modify some of the properties of the gelatin so as to produce improved results, which in some cases may lead to economies in manufacture.

The above is only a brief outline of the work being carried on for these industries, but it will give the reader some idea of the value of research to industries of this description. There is no doubt that it has helped many manufacturers to gain a better idea of the principles underlying their processes and in this way alone has assisted them in improving their products. In addition to research work the Association also runs an Information Bureau which collects all available information from the scientific and technical press. This information is conveyed to members in the form of abstracts which are published periodically in the Association's Journal, "Research".

CATALOGUE LIBRARY.

The undermentioned catalogues relating to United Kingdom manufacturers have recently been received and may be consulted by *bonâ fide* firms or individuals at the office of His Majesty's Senior Trade Commissioner in India, Fairlie House, Fairlie Place, Calcutta.

<i>Names and Addresses.</i>	<i>Description.</i>
Herbert Morris, Ltd., Loughborough.	Electric Cranes.
Fred. Townsend & Co., Ltd., Albion Works, Bollo Lane, Acton, London, W.C. 2.	Modern Laundry Machinery.

The above catalogues have also been received in the office of His Majesty's Trade Commissioner, 3, Witlet Road, Ballard Estate, Bombay, where they may also be consulted by *bonâ fide* firms or individuals.

In addition, His Majesty's Trade Commissioner, Bombay, has recently received the undermentioned catalogue:—

<i>Name and Address.</i>	<i>Description.</i>
Wilson Bros. (Leeds), Ltd., Leeds.	Woodworking machinery.

TRADE ENQUIRIES.

The names of the United Kingdom firms referred to in the enquiries mentioned below will be furnished to reputable firms on application to His Majesty's Senior Trade Commissioner, Post Box No. 683, Fairlie House, Fairlie Place, Calcutta.

No. 106-34.

A United Kingdom firm, who have secured an export agency of a United Kingdom firm of manufacturing chemists for toilet preparations desire to appoint agents in India.

No. 494-34.

A well-known firm of Manchester merchants who have recently taken over the piecegoods department of an old established Manchester shipping firm are desirous of securing the services of Indian representatives in Calcutta, Delhi, Cawnpore and Rangoon.

No. 495-34.

A United Kingdom firm who are manufacturers of soda fountains, ice cream freezers, Snack Bar and Restaurant Equipment, Brewer's machinery and sundries are desirous of appointing agents in India.

H. M. TRADE COMMISSIONERS IN INDIA.

Calcutta—

Sir Thomas M. Ainscough, C.B.E.,
*His Majesty's Senior Trade Commissioner in
India and Ceylon.*

Mr. R. B. Willmot,
His Majesty's Trade Commissioner at Calcutta.
Post Box No. 683, Fairlie House, Fairlie Place.
Telegraphic Address.—"Tradcom, Calcutta."
Telephone No.—"Calcutta 1042."

Bombay—

Mr. W. D. M. Clarke,
His Majesty's Trade Commissioner at Bombay.
Post Box No. 815, 3, Witley Road, Ballard
Estate.
Telegraphic Address.—"Tradcom, Bombay."
Telephone No.—"Bombay 23095."

Ceylon—

Imperial Trade Correspondent,
The Principal Collector of Customs, Colombo.

With Compliments.

JUNE



1934

The Commercial Bulletin

*A Monthly Review of Official and other
announcements relating particularly
to British Export Trade*

Issued by

**HIS MAJESTY'S SENIOR TRADE COMMISSIONER
IN INDIA AND CEYLON.**

**FAIRLIE HOUSE,
FAIRLIE PLACE,
CALCUTTA.**

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GENERAL.

The steady recovery of United Kingdom industry is clearly illustrated in the Trade Returns for April and for the first four months of the year.

The figures for the first four months of the year, compared with those for the corresponding period of last year are as follows:—

	<i>January/ April, 1931.</i>	<i>January/ April, 1933.</i>	<i>Increase.</i>
	£	£	£
Imports	230,948,112	210,051,749	20,896,363
Exports	121,812,507	116,115,242	5,697,265
Re-exports	19,922,752	16,112,012	3,780,740

The evidence provided of the greater activity of United Kingdom manufacturers is particularly gratifying. Of the total increase of £20,896,363 in imports nearly £20,000,000 represented raw materials for manufacture in the United Kingdom. Of the increase of nearly £8,700,000 in exports over £6,000,000 represented manufactured articles.

In April, both imports and exports recorded an appreciable rise in total value as compared with a year ago, imports increasing by £5,193,173 to £56,330,483 and exports increasing by £3,704,457 to £30,099,670. The rise in imports, as compared with April, 1933, is again due chiefly to increased purchases of raw materials and partly manufactured goods. The rise was especially marked in the case of iron ore and scrap, non-ferrous metals, wood and timber, raw cotton and rubber. The expansion of exports was also fairly general, cotton piece-goods and locomotives being the only items recording a decline. The improvement in sales abroad of machinery, woollen and worsted tissues, linen piece-goods and motor cars is particularly encouraging.

The exports of spirits have increased considerably largely as a result of the trade with the United States which country in April took 227,000 gallons as compared with 150 gallons in the corresponding month of last year.

Nothing illustrates so strikingly the improvement in the general economic position in the United Kingdom as the figures for unemployment in recent months. In

April, following the steady decrease of previous months, there was a decrease of no less than 53,382 according to the latest returns of the Ministry of Labour. There were 88,000 more persons working, making a total of over half a million more than the corresponding period of a year ago.

There was more employment during the recorded period in all the principal industries, excepting coal and textiles, which showed slight decreases. In building, ship repairing, engineering, iron and steel, tailoring, electrical equipment and road transport, there were very marked improvements. The total number of unemployed is 549,439 less than a year ago.

Further confirmation of the steady revival of industry in Great Britain is shown in the Survey of Industrial Development in 1933, recently issued by the Board of Trade.

This survey is designed to show the extent to which industrial development in the form of new factories, and factory extensions, took place last year. It shows also the parts of the country in which this development occurred, and the nature of the trades for which these factories were built or extended. Particulars are also given of certain factories closed down during the year, and the whole position in 1933 is compared with that of the previous year. The report records the starting of 463 factories, employing 29,500 workpeople, 95 factory extensions and the closing down of 409 factories. In case of 62 factories closed, their closure was due to transfer of work to another factory in the same ownership. The average number of workers employed over the whole field of the survey was 64 per factory.

It is interesting to learn that in more than 90 per cent. of the new factories the sole form of power adopted was electricity. This is undoubtedly due to the greatly increased facilities afforded to industry by the completion last year of the electricity "grid", that is to say, the linking up of the power production stations throughout the country, with its resultant cheapening of supply.

UNITED KINGDOM STEEL WIRE ROPES.

Some tests were recently carried out in vessels trading between Far Eastern ports in order to ascertain the comparative life of steel wire ropes purchased to the

same specification in different supplying countries. The specification was:—

2½" construction 6×24×7 hemp cores; breaking strain 90 tons per square inch; extra flexible.

The tests were made in vessels hauling heavy teak wood logs, firewood and old iron plates and the results were as follows:—

United Kingdom Rope.—Reached the limit of usefulness after 510 working hours.

Continental Rope.—Reached the limit of usefulness after 362 working hours.

Japanese Rope.—Reached the limit of usefulness after 382 working hours.

From the above it will be noted that United Kingdom wire ropes are superior to Continental and Japanese ropes to the extent of more than 40 per cent. and 30 per cent. respectively.

FINANCE.

NEW COMPANIES.

F. T. and A. D. Carmichael, Ltd.

A private company has been registered under the above name with a capital of £200,000 (20,000 six per cent. Cumulative Preference, 30,000 six per cent. Cumulative Participating "B" Preference and 150,000 Ordinary) to acquire the business of J. Carmichael & Co., yarn merchants, cotton spinners, etc. Directors: Frederick T. Carmichael and Archibald D. Carmichael. Solicitors: Linklaters and Paines, 2, Bond Court, Walbrook, London, E.C. 4.

Caribbean Oil, Ltd.

A concern of this name has been registered in Edinburgh as a private company, with a capital of £300,000 in £1 shares. The objects of the firm are to acquire petroleum or oil-bearing lands in Trinidad or elsewhere. Directors: John R. Orr and David W. Marwick. Registered office: 1, Howe Street, Edinburgh, 3.

Sierra Leone Selection Trust, Ltd.

A private company under this style was registered on 20th April with a nominal capital of £150,000 in 5s. shares. The objects of the company are to prospect, develop and work diamond, gold, silver and other mines, and to enter into an agreement, the heads of which have been approved by or on behalf of the Government of the Colony and Protectorate of Sierra Leone, Consolidated African Selection Trust and the company respectively. Solicitors: Broad and Son, 1, Great Winchester Street, London, E.C. 2.

Metal Securities, Ltd.

This company has been registered with a capital of £1,250,000 in 5,000,000 shares of 5s. for the purpose of carrying on the business of an investment and trust company, also that of financiers, agents, bankers, company promoters, underwriters, mine owners, metallurgists, etc.

The directors are:— Oliver Lyttelton (director of Amalgamated Metal Corporation), John H. C. E. Howeson (chairman of London Tin Corporation) and Andrew J. G. Murray-Graham (director of British Tin Investment Corporation).

The registered office is at 75-79, Coleman Street, London, E.C.

Commonwealth Mining and Finance, Ltd.

This concern has been registered as a public company, with a capital of £1,000,000 in 5s. shares, to acquire mineral and other rights and to carry on the business of capitalists, etc.

British Grain Shippers Association.

This association has been registered as a company, limited by guarantee, without share capital, to promote the production and marketing of United Kingdom wheat and other cereals, and to establish in the grain shipping trade uniformity in commercial usages. The management is vested in a council, the first members of which are F. Berry, E. A. Lessing (director of Strauss & Co.), J. McLaren (director of Wilmer Grain Co.), K. A. Oswald, A. C. Sanday (director of Sanday & Co.), K. B.

Stoddart (director of Earle Stoddart & Clayton), R. Todman (deputy-director of Merry Barclay & Co.) and A. R. Walker [director of Victorian Wheat Growers' Corporation (London)]. Registered office: 24, St. Mary Axe, London, E.C. 3.

AMALGAMATIONS.

The Mossend works of William Beardmore & Co., Ltd., which were closed down in July, 1928, have been disposed of to Messrs. David Colville & Sons, Ltd., in completion of a measure of rationalisation between the two companies with regard to which the initial steps were taken in January of 1930, when the plate mill at Parkhead was closed down.

It is understood that the transaction represents one of a series of operations whereby the position of the Scottish steel industry is being consolidated and its efficiency enhanced.

Cunard-White Star Merger.

The Cunard White Star was registered on 10th May, 1934, with a nominal capital of £10,000,000 in £1 shares, all of which are to be issued as fully paid and each credited with a premium of £1, by way of purchase consideration (6,200,000 to the Cunard Co. and 3,800,000 to the Oceanic Co.). No part of the consideration is separately allocated to goodwill.

The objects of the new firm are to acquire all or any of the interests in the North Atlantic shipping trade of or formerly belonging to the Cunard Steam Ship Co. and the Oceanic Steam Navigation Co. and to carry on the business of shipowners.

CONTRACTS SECURED.

Steel Bridges for the Argentine State Railways.

A contract for the supply and erection of fourteen steel bridge spans required by the Argentine State Railways has been secured by Braithwaite & Co. (Engineers). Ltd., at a cost of approximately £30,000.

Sack Making Machinery.

The contract has been secured against keen competition by Urquhart Lindsay and Robertson Orchar, Ltd., of

Dundee, for the supply to the Sociedad Anonima "Fabrica Nacional de Sacos" Santiago, Chile, of machinery for the manufacture of gunny bags. The contract, which is for the value of about £35,000, is for the complete preparing, spinning, weaving and finishing machinery for the complete factory, as well as shatting, dust extraction plant, etc.

Excavators for South Africa.

Ruston-Bucyrus, Ltd., Lincoln, have despatched to South Africa three 37-B Diesel drag line excavators for use by the Department of Irrigation, South African Government. The machines are required for the Vaal Haartze Irrigation Project. Tropical housing has been supplied for each machine and supplementary equipment for converting a drag line excavator to a shovel excavator and to a grabbing crane have also been included.

Order for Passenger and Cargo Steamers.

The Goole Shipbuilding and Repairing Co. (1927), Ltd., have received an order for two passenger and cargo steamers to be erected and dismantled for re-erection abroad. They will be specially designed for shallow-draught work, the twin screws working in tunnels and accommodation will be provided for 40 passengers. The machinery will be compound and the boilers oil-fired.

Tug for India.

McKie & Baxter, Ltd., Paisley, have received an order for a tug and teak-log carrier for service in India. The hull will be built by the Ardrossan Dockyard, Ltd., to designs supplied by the Paisley firm. McKie & Baxter will build the propelling machinery.

£3,000,000 Contract.

Metropolitan-Vickers Electrical Export, Co., Ltd., will undertake the electrification of the Central Brazil Railway, the decree authorizing which was signed on 15th May, 1934, by the President, Dr. Getulio Vargas.

The cost of the electrification scheme is approximately £3,000,000.

The firm was awarded the contract last year, after keen competition between six American, British, German, Italian and Swiss companies.

Big Order for Vickers Planes.

It is understood that the Commonwealth Government of Australia has ordered 24 Seagull V. amphibian planes to reinforce Australia's defences. This type is regarded as the most suitable for the duties involved.

The contract involves an outlay of £345,000 and will be given to the Vickers Super-marine Aviation Works Southampton.

Diesel Engines.

Among orders from almost every corner of the world received by Crossley Brothers, Ltd., Manchester, and its associated company, the Premier Gas Engine Co., Ltd., Nottingham, is a repeat contract for five horizontal Diesel engines from an Australian gold-mining company. This brings the oil engine installation of the company up to eleven Crossley-Premier Diesels, aggregating 7,700 brake horse-power.

The Burmah Oil Co., Ltd., has ordered nine Crossley vertical Diesel engines, with Mather and Platt pumps each capable of dealing with 630,000 gallons a day.

Waygood-Otis Contracts.

Waygood-Otis, Ltd. (lift and escalator manufacturers) have been awarded the contract for 14 lifts for the General Post Office, Johannesburg. This is believed to be the largest Government contract for lifts ever placed in the Union of South Africa.

Order for Sugar Machinery.

Messrs. Pott, Cassells and Williamson, Motherwell, have secured a large order for sugar machinery for the Dominions.

Alternator Set for India.

The English Electric Co., Ltd., Stafford, have received an order from the Delhi Electric Supply and Traction Co., Ltd., for a 1,030-kw. Fullagar-engined alternator set. The plant will comprise an English-Electric Fullagar opposed-piston, mechanical-injection engine, having a normal full-load output of 1,470 b.h.p. at 300 r.p.m., and will be direct-coupled to a 1,030-kw. alternator with overhung exciter, generating power at 6,000/6,600 volts, three-phase, 50 cycles.

Coal Transporters for Dublin.

Crossley Brothers, Ltd., Manchester, and their associated Co., The Premier Gas Engine Co., Ltd., Nottingham, have, during the past month, received orders to supply and erect two electrically-driven coal transporters at the Pigeon House installation of the Electricity Supply Board of the Irish Free State, Dublin. Each machine is to have a capacity of 90 tons of coal an hour. All coal will be weighed and recorded before delivery either to the boiler house or to the storage ground.

Insulators for India.

Steatite & Porcelain Products, Ltd., Stourport, have received a large order to supply insulators for the Madras Government. The contract has been placed by the main contractors, British Insulated Cables, Ltd.; it covers the supply of 22,000 suspension insulators to be used in the erection of 82 miles of double circuit 66kV transmission line between Erode and Trichinopoly in connection with the Pykara hydro-electric scheme. For the same scheme, Steatite & Porcelain Products, Ltd., are supplying all the insulators for the 66 kV isolating switches, as well as sub-station insulators.

Motor Cycles for Holland.

An order for 72 motor cycles, worth approximately £3,000, has been received from Holland by Ariel Motors (J.S.) Ltd., of Selly Oak, Birmingham. Although Holland is one of the largest consumers of motor cycles of United Kingdom manufacture, an order of this magnitude is unusual.

Soviet Orders.

Arcos Ltd., on behalf of the Soviet Government, have placed the following orders with firms in the Lancashire area:—Machine tools to the value of £11,100 with Churchill Machine Tool Co., Ltd., Broadheath; machine tools to the value of £6,300 with Kendall & Gent (1920) Ltd., of Gorton, Manchester; and machine tools to the value of £1,100 with George Richards & Co., Ltd., of Broadheath; ferro-alloys to the value of £15,000 with High Speed Alloys Ltd., of Widnes, Lancashire.

Boilers for South Africa.

A contract from South Africa, valued at £130,000, for the construction of boilers for Pretoria's new municipal power scheme has been placed with Yarrow of Scotstoun-on-Clyde.

Egyptian Government Contract.

Beynon & Co., Ltd., Cardiff, have been awarded the contract by the Egyptian State Railways for the supply of 297,000 metric tons of coal.

Railway Contracts.

Sir W. G. Armstrong-Whitworth & Co. (Engineers), Ltd., have received an order from the Madras and Southern Mahratta Railway for six oil-electric railcar double-bogie chassis for the 5 ft. 6 in. gauge.

Guest, Keen & Nettlefolds Ltd. have received an order from the Argentine North Eastern Railway for 60,000 steel fishbolts for 55-lb. rails.

The Hunslet Engine Co., Ltd., Leeds, have received orders for five locomotives for the Chinese Government Purchasing Commission; one order is for a gauge tank locomotive for the Nanking train ferry; the other order is for four locomotives and tenders for the Hangchow-Kiangshan Railway.

The Birmingham Railway Carriage and Wagon Co., Ltd., have received an order from The Crown Agents for the Colonies for 40 12-ton wagons for the Palestine Railways.

The South African Railways and Harbours Administration have placed orders for permanent way equipment with Guest, Keen and Nettlefolds Ltd., to the approximate total value of £37,500.

An order for two diesel electric locomotives, each of 1,300 b.h.p. for main line service has been secured by Sir W. G. Armstrong-Whitworth & Co., Ltd., from the Government of India. The locomotives are designed for use on the Lahore-Karachi Mail Services of the North Western Railway.

Beyer, Peacock & Co., Ltd., Gorton Foundry, Manchester, have secured the contract from the Peruvian Corporation Ltd. for three 8-wheel coupled-bogie engines and tenders of new design for hauling trains over the

most difficult railway section in the world over the Peruvian Andes.

Cravens Railway Carriage and Wagon Co., of Sheffield, have under construction for the Russian Government a railway wagon which, it is believed, will be the largest in the world. This wagon, which has a length of 100 ft., a weight of 90 tons, and a load capacity of 200 tons, is to be used for the transport of heavy units of machinery.

Coal for North Europe.

North European business is again much in evidence in the coal export trade.

Contracts closed include those of the Oslo Gas Works for 30,000 tons of best Durham coking coal and 15,000 tons of other grades; the Helsingfors Gas Works for 20,000 tons of Durham coking coal, and the Helsingfors Electricity Works for 4,000 tons of Scottish gas coal.

THE IRON AND STEEL INDUSTRY.

The outstanding event of last month has been the decision of the Government, acting on the recommendation of the Import Duties Advisory Committee, to remove the time limit to the duties on iron and steel imports. The following announcement was issued from the Treasury on May 17th: "Under the Additional Import Duties (No. 18) Order, 1934, issued by the Treasury, on the recommendation of the Import Duties Advisory Committee, the customs duties on iron and steel which under the Additional Import Duties (No. 8) Order, 1932, are due to expire on 25th October, 1934, are made chargeable without any limit of period."

In their report recommending the removal of the time limit to the present duties the Import Duties Advisory Committee state that, although the Order of October, 1932, is not due to expire for some six months, it has been urged that the present uncertainty is retarding plans for the better organisation of the industry and schemes of capital development of industrial plants and, further, that it is encouraging foreign producers to continue to export at a loss to the United Kingdom so as to retain

their footing in that market against the possible reduction in the duty after October next.

The Committee also state that the present scheme of re-organisation, contained in the revised constitution of the British Iron and Steel Federation, which was approved by a Special General meeting of the Federation on April 19th, 1934, while of a less compelling character than the outline scheme submitted in March, 1933, is on substantially the same lines and it has the support of the great bulk of the industry, a fact which should make for rapid progress in its application.

In a statement made immediately after the Government's announcement the Chairman of the British (Guest Keen Baldwins) Iron and Steel Co., Ltd., stated that his company would go ahead at once with the Cardiff-Dowlais steel works extension scheme. As previously announced plans had been prepared for the reconstruction of these works at a cost of about £2 million, but could not be put in hand until there was some assurance from the Government that protection from the dumping of foreign iron and steel at uneconomic prices would be permanent. The new works are being designed to turn out 300,000 tons of billets and sheet bars per annum and will provide permanent employment for 1,500 men, in addition to increased employment in allied trades and services.

During April the iron and steel industry in the United Kingdom as a whole maintained the improvement which has been characteristic of the past eighteen months or so. At the end of the month there were 98 furnaces in blast, a net gain of three compared with the preceding month. The average daily rate of pig iron output in April showed an increase of 2 per cent. compared with March, although the total output (496,300 tons), owing to the shorter month, was somewhat less than in March (503,600 tons). In April, 1933, production totalled 324,700 tons.

The production of steel ingots and castings totalled 715,800 tons in April compared with 834,500 tons in March, but this reduction was also explained by the shorter working month together with the incidence of the Easter holidays, and the average daily rate of steel production was at approximately the same level as in the preceding month. In April, 1933, steel output totalled 509,600 tons.

The total imports of iron and steel in the United Kingdom amounted to 125,300 tons in April against

121,600 tons in March and 70,900 tons in April last year. Exports of iron and steel totalled 165,200 tons in April compared with 171,500 tons in March and 132,800 tons in April, 1933.

Most sections of the industry report improved conditions although in certain departments such as tinplates and galvanised sheets, which are particularly dependent on export trade, there is still an urgent need of new orders. Export trade continues to be seriously hampered by numerous exchange restrictions and trade barriers. The volume of domestic business, which is the dominating feature in the iron and steel industry, continues to be active for practically all products.

Pig iron producers in the United Kingdom report that intense competition is being encountered from the Continental makers in export markets but domestic trade, although confined in the main to small tonnages, is fairly satisfactory in the aggregate and, in addition to absorbing the higher output, has led to a reduction of stocks. As many contracts are due to terminate during the next few weeks an expansion in forward buying is expected before long.

There has recently been a slight falling off in new business in semi-finished material. This decline, however, is attributable to the fact that many large consumers have covered their requirements for some time ahead and demand is still sufficient to absorb the present output. As is evident from the figures quoted above imports of Continental semi-finished material are still at a comparatively high level. Finished steel products in general are in good demand on the domestic market as most of the major steel consuming trades are placing fairly substantial contracts. The recent improvement in shipbuilding is welcome and the engineering industries in general are providing an increasing outlet for steel products. Although more enquiries have recently been received from overseas markets demand is confined in the main to small tonnages.

MACHINE TOOLS.

Milling and Diesinking Machine.—Taylor, Taylor & Hobson Ltd., Stoughton Street Works, Leicester, are now producing a heavy duty 3-dimensional pantograph engraving machine primarily for diesinking and similar milling operations. Examples of work recently produced by the machine comprise (1) the die for a small connect-

ing rod, which was copied from an artificial stone mould in 2 hours 20 minutes, the reduction being 2 to 1; (2) an ornamental shell pattern mould, which was sunk in cast iron from a wooden master in 3 hours, the reduction being 3 to 1; and (3) the mould for a rubber heel, which was sunk in mild steel in 3½ hours. The depth of the impression is ⅜-inch and the reduction 3 to 1, the production time for this and the connecting-rod die including a roughing as well as a finishing cut. Apart from its heavy proportions and the exceptional rigidity of the pantograph arms, the chief features of the machine are the provision of two tables, one for the master and one for the work, with adjustment in vertical, horizontal and transverse directions. The tables are independently carried on a long cross slide, the independent arrangement greatly facilitating setting and milling operations.

The pantograph arms are stiff box-section castings turning on heavy-type ball bearings in which provision is made for taking up play, the arms being adjustable to provide reductions varying from 1½ to 1 to 7 to 1. The cutter spindle is a heavily-constructed ball bearing unit and is provided with a vertical movement controlled by a counterweighted beam extending over the top of the machine. Both the cutter spindle and the style or copying member are attached to the beam which terminates in a handle whereby the style is manipulated, movement of the style in a horizontal direction being transmitted to the cutter spindle through the pantograph arms, and in a vertical direction through the tilting movement of the beam. The vertical and horizontal movements are in the same ratio, thus ensuring a true copy, the maximum vertical motion at the style amounting to 3 inches. In addition to this, the cutter spindle has an independent feed of ½-inch which, in conjunction with the vertical adjustment of the tables, enables impressions of greater depth than represented by the movement of the tilting beam to be dealt with. If movement in a horizontal direction only is required, the operator simply locks the cutter spindle in its carrier and works the style as in ordinary engraving.

The 3-dimensional copying principle described is a patented feature and offers important advantages, inasmuch as, under all conditions of movement, the cutter spindle and style are always vertical and do not tilt as in the case of machines in which three dimensions are obtained by tilting the pantograph about a horizontal

axis. A feeding screw of generous diameter is employed to control the motion of the pantograph and to permit a succession of regularly pitched cuts being taken across the work. This is of particular advantage when taking heavy roughing cuts, the screw being instantly disconnected when a fully flexible pantograph is required. The machine mounts a $\frac{1}{4}$ -h.p. motor, which drives the spindle through round belts running over adjustable jockey pulleys, the drive providing a range of nine speeds varying from 600 to 6,000 or 500 to 10,000 r.p.m. at the cutter spindle.

CINEMATOGRAPHY.

TRIUMPH OF THE UNITED KINGDOM FILM.

The productions of the United Kingdom Film Industry are becoming known in most parts of the world, because it is now generally recognised that they are as good as those of any other country. Until recently their greatest competitor was Hollywood, and they received little recognition in the United States of America. But now Hollywood itself has been largely responsible for the very generous tribute which has been offered by the Academy of Motion Picture Arts and Sciences of America. This Academy includes in its membership all the principal producers, directors, authors, actors, actresses and technicians in Hollywood. Its annual awards for merit are greatly coveted in the film world. The Academy has voted in favour of the London Film Productions "The Private Life of Henry VIII", stating that the performance in it by the Englishman, Charles Laughton, is the finest performance by any actor in films in 1933. In 1931 the U. S. A. Department of Commerce expressed the opinion that United Kingdom films have local features which make them of greater "audience value" than those made in the U. S. A., and this has since been proved to be true in actual practice.

It is interesting to record that in the programme of United Kingdom Film Studios for 1934 there are many noteworthy works of historical and literary interest. There will be films of "Nell Gwynne", "Lorna Doone", "David Copperfield", "Jane Eyre", "Cecil Rhodes", and many others. Some of Rudyard Kipling's stories will also be turned into films. It is safe to prophesy that 1934 will be a great year for United Kingdom

Film Studios and that the productions will not fail to establish themselves wherever good films are appreciated.

THE BRITISH FILM INSTITUTE.

By a Correspondent.

The foundation of the British Film Institute, which has become possible by grants from various interested bodies as well as by the receipt of a proportion of the income from Sunday cinematograph performances in Great Britain, is a final proof that the film industry has outgrown the stage when its function was to provide entertainment, of some sort or any sort, for idle hours. In some foreign countries Film Institutes have existed for some time, mostly in the form of special Government departments, but it is only in recent years that circumstances have permitted the film industry in Great Britain sufficient progress and expansion to warrant a serious survey of the whole field, which was undertaken by the Commission on Educational and Cultural Films, and whose report in 1932 was the first step towards the Film Institute's establishment.

The general aim of the Institute is to "encourage the use and development of the cinematograph as a means of entertainment and instruction", but this generalisation embraces so wide a field that the work of the Institute will have to be conducted through a number of special committees and a staff of specially qualified persons. One of its important functions will be to establish effective co-operation between those who produce, distribute and exhibit the films and those whose work or interest is connected with the artistic, educational, and cultural possibilities of films. The Institute does not, however, intend to interfere with the professional side of the film trade. Recent films have amply demonstrated that there is no cause for worry regarding the ability of our technical experts. What the Institute aims at is to encourage the production of more good films at the same time inducing more people to see them. In other words, it wants to ensure for the public films which are a little better than they think they want, and to convince the producer that the public wishes to see the best he can possibly produce.

While not neglecting the entertainment aspect of films, the Institute is vitally interested in their cultural and educational possibilities. It encourages research into

various uses of the film, as for instance its suitability for the teaching of arts and crafts, for demonstrating developments in the realm of science, etc. It acts as an information bureau for schools and other bodies in search of suitable class room films on definite subjects, advises them on how and where to obtain the necessary apparatus for their exhibition, etc. On the other hand it informs producers regarding the type of film required for this purpose.

To ensure the support of the general public, for the benefit of which the Institute exists, film societies are being formed in every part of the country, where lectures are being given on every aspect of cinematography. The Institute also organises summer schools for the training in cinematography and its educational use, and, through co-operation with the International Institute at Rome, which has been charged by the League of Nations with the duty of studying the educational branch of film activity, it ensures that British films of cultural and educational value shall be exhibited abroad, and that similar foreign films shall be exhibited in the United Kingdom.

All information regarding films will be available at the Institute, which is also establishing a national library of films which possess such special qualities—historical, artistic or otherwise—as will give them permanent value. Not least important is the Institute's work to make cinematography a new and strong link between the United Kingdom and its Dominions and Colonies, where an organised effort to represent English life and thought cannot fail to yield rich fruits.

TEXTILES.

COTTON.

Raw cotton prices tended to decline until the end of the first week in May, but opinion in the markets anticipated a recovery late in the month, which would continue through the summer. This confidence was shown to be not entirely unjustified and was reflected in Manchester, where an added impetus to business derived from the announcement of quotas for imports into the Colonies. Considerable fresh enquiry was received, and fairly evenly shared between the different markets. Far Eastern markets continue quiet, but a few fancies have been booked for the Straits. The Near East has sent out

more enquiry than of late, but with the exception of some lots of tanjibs and mulls for Egypt, the resultant business has been very small.

West Africa has shown a revival of interest, no doubt in anticipation of some government action on the expiry of the treaty with Japan, but arrivals of Japanese goods are reported still to be heavy.

Finishing cloths and coloured goods have been shipped to South America in satisfactory quantities—particularly to Colombia.

The home trade has renewed its interest in satéens, casements, cretonnes and better class goods. South Africa has placed good orders for heavy drills, and Australia for prints, while Canada has taken striped poplins.

The improvement has not yet been very perceptible in the yarn market, where enquiry is more in the nature of price testing, than a preliminary to serious transactions. Some increase is reported, however, in the amount of business done, and that without any weakening of prices.

In the face of comparatively cheerful reports from the markets, the export returns for April serve only to emphasize the improvement which has taken place since the end of that month. The figures, compared with those for March of this year and April of last, are as follows:—

(000's omitted).			
	<i>April, 1934. lbs.</i>	<i>March, 1934. lbs.</i>	<i>April, 1933. lbs.</i>
Yarn, grey . . .	9,688	10,606	7,990
Yarn, other . . .	1,051	1,304	1,354
Total . . .	<u>10,739</u>	<u>11,910</u>	<u>9,344</u>
<i>Piece Goods.</i>	<i>sq. yds.</i>	<i>sq. yds.</i>	<i>sq. yds.</i>
Grey . . .	30,128	31,905	30,003
Bleached . . .	49,266	53,108	60,060
Printed . . .	26,140	32,109	28,795
Dyed . . .	41,839	46,202	44,342
Coloured . . .	5,902	6,703	8,009
Total . . .	<u>153,575</u>	<u>170,027</u>	<u>171,209</u>

LINEN.

Prices for linen yarn in Northern Ireland remain firm. Spinners are busy in effecting deliveries against contracts previously booked. Exports of flax and hemp yarns for the month of April were valued at £69,436 as compared with £54,971 and £47,460 respectively for the same month in 1933 and 1932.

Exports of piece goods during April reached the total of £353,192, as compared with £264,143 and £337,129 in April, 1933 and 1932. This is the third highest monthly total for the exports of piece goods during the last three years.

Exports of piece goods to the United States of America were valued at £154,822, as compared with £95,017 in April, 1933, and £155,031 in April, 1932.

Other markets for piece goods which showed a good improvement for the month as compared with April of last year are China (£26,274, against £11,976), Australia (£25,899, against £19,457) and Canada (£21,617, against £15,969). To Brazil, however, there was a decrease in the export of piece goods from £25,061 in April, 1933, to £6,999 in April, 1934.

Exports of damask table linen for the month were valued at £43,962, as compared with £40,967 and £62,312 in April, 1933 and 1932.

Exports of handkerchiefs continued to fall, the comparison for April, 1934, 1933 and 1932 being £17,238, £19,083 and £25,224.

Imports of linen manufactures into the United Kingdom during April were valued at £17,378, as compared with £26,658 in April, 1933, and £26,943 in April, 1932. The total values of exports of linen goods from the United Kingdom during April, 1934, 1933 and 1932, were respectively £505,203, £400,687 and £532,658.

Total exports of linen goods from the United Kingdom during the four months ended 30th April, 1934, 1933 and 1932, were respectively £2,012,350, £1,754,724 and £1,921,845.

The quantities of linen piece goods exported during the same periods were respectively 29,013,000, 25,347,000 and 26,805,000 square yards.

WOOL.

Messrs. H. Dawson Sons & Co., Ltd., the well known wool brokers, commenting on the outlook at the beginning of the third series of London wool sales state:—

“ The temporary prohibition of imports of wool in Germany is now adding increasing difficulties. It has already led to the postponement of our London sales from 24th April until 1st May, and also to a week's postponement of the Colonial sales in Sydney and Brisbane.

“ Happily, it is announced that this prohibition will be terminated on 5th May ” [since altered to 21st May].

“ Demand has been severely checked, but supplies are equally small. Naturally, owners do not care to offer in the auctions until German support is assured, and this partially accounts for the small offerings at this series.

“ It is difficult, however, to see any justifiable reason for any weakening of values in fine wools. The enormous shortages in the Australian clip, estimated at about 350,000 bales, and in the Cape clip of about 120,000 bales have now begun to make themselves felt.

“ The abnormally small proportion of Australians that were available testify to the serious fine-wool position which has to be faced, and there does not seem to be much chance of augmenting the arrivals of Australians until September. It is not surprising, therefore, that supplies of New Zealand and Puntas account for three-fourths of the offerings to be made at the present series.

“ Reports indicate that the consumption is still fairly well maintained in most markets, although Bradford is largely employed on old contracts. Up to now there seems to be no serious decline in fine grades. It is evident that soft merino cloths remain in keen demand, especially for ladies' costumes and for underwear.

“ Despite this, however, owing to the relatively high price of merinos, there is undoubtedly a tendency towards a gradual substitution of lower grades being made to meet the demand for cheaper cloths in men's wear. The large multiple shops which provide suits at fixed prices are naturally

compelled to buy the best value possible to fit their price, and this must eventually give a strong impetus to medium grades of crossbreds.

" This is not yet apparent, for these sorts have seriously weakened during the past months, especially in New Zealand wools, due to the large supply available at the moment on the markets. The tendency, however, should materialise towards the end of the summer and the beginning of next season.

" Meanwhile, some of the most important fine spinners in Yorkshire are engaged on crossbreds to an unusually large extent.

" The new arrivals of merino wools are extremely meagre, and one can foresee considerable substitution in the demand for cross-bred sorts, or, alternatively, some serious anomalies in fine values during the next six months.

" We greatly miss the support of U.S.A. Many American experts consider that U.S.A. will soon have to be a buyer of foreign wools in our markets, as there seems to be a steady improvement in the textile industry, which, although slow, may be permanent."

Exports of woollen semi-manufactures and tissues during April, though on the whole smaller than during March, show a considerable increase over those for April of last year.

The exports of tops exceeded those for last April by some 800,000 lbs. thanks chiefly to the doubling of Canada's takings. Worsted yarns showed an increase in all markets with the single exception of Denmark, whose imports dropped by over 100,000 lbs.

In tissues the increase of exports over last April is almost wholly accounted for by increased takings by Canada and the Union of South Africa. The comparative figures are as follows:—

	<i>April, 1934.</i>	<i>April, 1933.</i>
	<i>lbs.</i>	<i>lbs.</i>
Tops	3,827,000	3,005,000
Woollen yarn	685,700	477,000
Worsted yarn	2,731,700	2,274,800
	<i>sq. yds.</i>	<i>sq. yds.</i>
Woollen tissues	4,538,000	3,684,000
Worsted tissues	2,310,000	1,861,000

POTTERY AND GLASSWARE.

Conditions generally in the pottery industry continue to be steady. Recent unemployment figures published indicated that 11,263 operatives were either out of work or on short-time compared with 17,870 in March, 1933, 16,446 in March, 1932, 19,838 in April, 1931, 12,179 in April, 1930, and 6,936 in April, 1929.

In the glazed wall and hearth tile section of the industry practically all firms are fully engaged. New factories are being erected and extensions are being made to a number of works in view of the very definite evidence that the present increased demand for tiles is likely to be maintained.

Following are details of the export of pottery for the first four months of 1934, together with comparative figures for the corresponding period of 1933:—

<i>Class.</i>	<i>Value of Exports.</i>		<i>Increase.</i>	<i>Increase</i>
	<i>1934.</i>	<i>1933.</i>		<i>per cent.</i>
	£	£	£	<i>over 1933.</i>
Tiles (all classes) . .	65,838	62,273	3,565	5.7
Sanitary ware . .	193,860	181,519	9,341	5.1
China ware . .	65,905	51,498	14,407	28.0
Electrical ware . .	28,473	18,444	10,029	54.4
Earthenware of all other descriptions.	455,413	432,598	22,815	5.3
Refractory goods not elsewhere specified.	76,070	70,487	5,583	8.0
All other descriptions	21,336	23,393	2,057 (dec.)	8.8 (dec.)
Total .	906,895	843,212	63,683	7.6

There is no change of any consequence to record for the glass industry.

Following are details of the exports of glass and glassware for the first four months of 1934, together with comparative figures for the corresponding period of 1933:—

<i>Class.</i>	<i>Value of Exports.</i>		<i>Increase.</i>	<i>Increase</i>
	<i>1934.</i>	<i>1933.</i>		<i>per cent.</i>
	£	£	£	<i>over 1933.</i>
Scientific glassware .	21,147	22,438	1,709	7.6
Domestic and fancy glassware.	50,431	42,551	7,880	18.5
Plate and sheet glass .	241,257	216,518	24,739	11.4
Glass bottles and jars .	74,210	88,347	14,137 (dec.)	16.0 (dec.)
All other kinds of glass and glassware.	31,619	27,813	3,836	13.8
Total .	421,694	397,667	24,027	6.0

PAPER.

Little or no change has occurred in conditions in the paper industry during the last month, and the steady improvement which has been previously reported continues both as regards home and export business.

The following figures show the value of the exports of paper and cardboard for the first four months of 1934, with comparative figures for the corresponding period of 1933 and 1932:—

	£
1934	1,963,813
1933	1,914,043
1932	2,205,229

The following statement gives details for the various sections:—

Section	Value of Exports.		Increase. Decrease.		Inc. or Dec. per cent over 1933.	
	1934. £	1933. £	£	£	Inc.	Dec.
Newsprint in rolls .	231,170	300,893	—	69,723	—	23.0
Other printing paper	440,965	397,882	43,103	—	10.0	—
Writing paper in large sheets.	149,036	132,996	16,040	—	12.0	—
All other sorts .	1,14,662	1,082,272	60,350	—	5.6	—
Total .	<u>1,963,813</u>	<u>1,914,043</u>	<u>49,770</u>	<u>—</u>	<u>2.1</u>	<u>—</u>

AVIATION.

NEW WORLD "RECORD" FOR BRITAIN.

Heavy-Oil Engine Drives Aeroplane to 28,000 feet.

Exactly one month after an Italian aeroplane, powered with a "Pegasus" supercharged engine, had set a new world aeroplane height record of 47,360 feet, an engine of entirely different type but also designed and built by the Bristol Aeroplane Company is the essential factor in the establishment of yet another height record.

Commendatore Renato Donati made his ascent on April 11, his flight that day being the culmination of three months of purposeful tests and his seventeenth climb in that period to more than 10,000 metres (32,800 feet) above sea-level. On May 11, Mr. H. J. Penrose, piloting a Westland "Wapiti" biplane equipped with a Bristol "Phoenix" compression-ignition motor running on heavy-oil, reached a height of approximately

28,000 feet—5,000 feet higher than any similarly powered aircraft had previously climbed. His flight is of vital importance, because it has proved decisively—against the weight of much informed opinion—that the heavy-oil motor does not possess inherent inability to work in the thin air of the great heights.

The aeroplane, a standard "Wapiti" biplane of the kind employed by the Royal Air Force for several years, and loaded to a weight of 4,564 pounds, took off from Yeovil aerodrome, Somerset, in excellent weather. Two officially sealed recording barographs, placed on board by a representative of the Royal Aero Club, were important details of equipment. Ballast in one cockpit took the place of the observer who would normally form part of the crew of two men.

At the greatest height reached the temperature recorded outside the machine was 40 degrees below zero Centigrade. The air density was approximately 40 per cent. less than at ground level. The engine, which ignites the mixture of heavy-oil spray and air in the cylinders solely by compression without the help of an electrical ignition system, continued to run satisfactorily. No signs were perceptible of the failure to burn the mixture in the thin air, with consequent stopping of the engine, that some had feared. Actually, the machine reached a height greater than it could reach, carrying equivalent load, with its normal petrol-burning engine of about the same horsepower, which lost power with increase of height at approximately twice the rate observed with the "Phoenix".

Research and Experiment.

Eight years of intensive development and research have gone to the development of the "Phoenix" engine. Preliminary research alone occupied more than five years, and demanded several thousands of hours running on various sizes and kinds of single-cylinder units. Not till this stage of the work was satisfactorily concluded was building of a complete engine begun, on the same general lines as the well-known "Pegasus" petrol-burning engine and of similar cylindrical capacity—28.7 litres.

Results obtained on the test-bench and in flight are better than were expected. The latest "Phoenix" motor is giving better power and fuel consumption than was anticipated, though no attempt has been made to

"boost" power by the use of excessively high maximum explosion pressures and no special blends of fuel have been employed; the fuel fed to the engine all through the trials has been standard commercial crude oil fuel of a kind obtainable throughout the world and used by the Admiralty and for lorry transport.

In short, the engine compares very favourably with the best air-cooled petrol-burning engines of four or five years ago; interesting light on the rapidity of aero engine development of the past few years is the fact that the "Phoenix" would to-day rank as an outstanding technical proposition were it not for the tremendous advance of petrol-burning motors which, mainly because of the introduction of new fuels of high "anti-knock" value, have attained higher thermal efficiency, higher power output and improved economy of fuel as the direct result of the employment of increased compression ratios.

Fuel Economy.

Nevertheless, the class of compression-ignition engines represented by the "Phoenix" promises much. Its fuel economy on long flights points to future employment in long-range military aircraft; its fuel economy and freedom from fire risks are of direct interest to the commercial aircraft operator. There is the further possibility that engines consuming heavy oil might be invaluable in remote, undeveloped territories where trustworthy volatile spirit of the quality needed in petrol burning aero engines cannot readily be obtained.

The "Wapiti" biplane used for the "Phoenix" tests was a standard craft that had formerly derived power from a "Jupiter VIIIF" air-cooled engine of slightly higher power than the "Phoenix" which develops, in its latest form, a rated power of 415 h.p. and maximum power (for take-off) of 470 h.p. Few alterations were necessary, except for changes in the fuel system and engine controls. A Townsend resistance-lessening ring was fitted around the engine.

Starting the compression-ignition unit either by hand or electrically was positive and satisfactory. No difficulty was experienced in starting, though on one occasion the engine was standing for about seven days between consecutive flights. Slow running, though a little faster than with a petrol engine, was regular and the engine proved markedly smooth with no sign of the

well-known diesel "thump". The motor was also found to be exceptionally quiet, both from the ground and in the aeroplane.

Good Climb.

Power output at height was maintained much better than in the comparable petrol-burning engine. Compared with the performance obtained with the "Jupiter" engine of slightly higher power rating, the "Wapiti" powered with the "Phoenix" showed an increase of 5 m.p.h. in maximum speed at a height of 15,000 feet, and the time taken to climb to that height was improved by 13 per cent. Take-off with the heavy-oil motor was equally good, needing only 13 seconds for a run of 500 feet with the machine loaded up to 5,300 pounds.

Fuel consumption records gave the "Phoenix" an improvement of 35 per cent. over the standard "Jupiter" installation when operating at the same normal cruising speed.

Much interest attaches, especially from the viewpoint of commercial operation, to the reduction of fire risk got with the compression-ignition motor. Incidentally, the danger is accentuated on many newer types of civil aeroplanes which employ very closely cowled engines. The compression-ignition motor reduces the fire risk because the fuel itself is not volatile, electrical ignition is not used and the operating temperatures of the engine and particularly of the exhaust system are much lower than on the corresponding type of petrol-burning engine. Actual flying experience with compression-ignition motors in the United States have proved the greatly reduced fire-risk. Several major crashes of 'planes fitted with heavy oil motors have occurred there without fire breaking out. Other incidents during development of new aircraft, where minor mechanical breakdowns during flight have resulted in fuel spraying continuously on to the exhaust system and engine installation without sign of fire over periods of several minutes, have heightened the belief that the compression-ignition motor goes far to eliminate all fire perils.

The "Phoenix", with its maximum power of 470 h.p. for take-off, weighs only 1,090 pounds—2·35 pounds/h.p.—which is a remarkable achievement in compression-

ignition engine design. Like all of the other motors in the Bristol range, it is a nine-cylinder radial unit. Its normal engine speed is 1,900 revolutions a minute, and the maximum is 2,000 r.p.m.

CATALOGUE LIBRARY.

The undermentioned catalogues relating to United Kingdom manufacturers have recently been received and may be consulted by *bonâ fide* firms or individuals at the Office of His Majesty's Senior Trade Commissioner in India, Fainlie House, Fairlie Place, Calcutta.

<i>Names and Addresses.</i>	<i>Description.</i>
L. Lumley & Co., 121, Minories, London, E.C. 3.	Brewers' and Bottlers' machinery and sundries, Soda Fountains and Soda Fountain Equipment, Cider, Wine and Fruit Working machinery, Hotel, Cafe, Restaurant and Kitchen equipment.
The Welsh Plate and Sheet Manufacturers, 2, Northumberland Avenue, London, W.C. 2.	Technical information about Welsh Tinsplates and Blackplates and Terneplates.
* British Monomarks, Ltd., Monomark House, 95/99, High Holborn, London, W.C. 1.	The Monomark system and service.

* The catalogue marked with an asterisk has also been received in the Office of His Majesty's Trade Commissioner, 3, Wittet Road, Ballard Estate, Bombay, where it may also be consulted by *bonâ fide* firms or individuals.

In addition, His Majesty's Trade Commissioner, Bombay, has recently received the undermentioned catalogue:—

<i>Name and Address.</i>	<i>Description.</i>
C. W. Field Ltd., 92, Wood Street, Liverpool.	Essential oils, soluble fruit essences, confectionery colors, heading extracts, etc.

TRADE ENQUIRY.

The name of the United Kingdom firm referred to in the enquiry mentioned below will be furnished to reputable firms on application to His Majesty's Senior Trade Commissioner, Post Box No. 683, Fairlie House, Fairlie Place, Calcutta.

No. 602-34.

A United Kingdom firm manufacturing electrical and automobile products are desirous of appointing agents in India for the following articles:—

- A. “ Dyna test ”—“ All-In ” Electrical Test Bench for motor cars.
- B. Coil, Condenser and complete Ignition Tester.
- C. Engine Compression Tester.
- D. Various Accessory lines for the motor trade.

H. M. TRADE COMMISSIONERS IN INDIA.

Calcutta—

Sir Thomas M. Ainscough, C.B.E.,
*His Majesty's Senior Trade Commissioner in
India and Ceylon.*

Mr. R. B. Willmot,
His Majesty's Trade Commissioner at Calcutta.
Post Box No. 683, Fairlie House, Fairlie Place.
Telegraphic Address.—"Tradcom, Calcutta."
Telephone No.—"Calcutta 1042."

Bombay—

Mr. W. D. M. Clarke,
His Majesty's Trade Commissioner at Bombay.
Post Box No. 815, 3, Wittet Road, Ballard
Estate.
Telegraphic Address.—"Tradcom, Bombay."
Telephone No.—"Bombay 23095."

Ceylon—

Imperial Trade Correspondent,
The Principal Collector of Customs, Colombo.

With Compliments.

JULY



1934

The
Commercial Bulletin

*A Monthly Review of Official and other
announcements relating particularly
to British Export Trade.*

Issued by
**HIS MAJESTY'S SENIOR TRADE COMMISSIONER
IN INDIA AND CEYLON.**

**FAIRLIE HOUSE,
FAIRLIE PLACE,
CALCUTTA.**

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GENERAL.

The external trade of the United Kingdom continues to expand. The official figures for May show considerable increases in imports, exports and re-exports in comparison with the previous month and with May of last year.

Exports have risen by nearly 9 per cent., while imports are almost 10 per cent. higher than in April. The full figures are as follows:—

	<i>May, 1934.</i>	<i>April, 1934.</i>	<i>May, 1933.</i>
	£	£	£
Imports . . .	61,727,000	56,330,000	57,276,000
Exports . . .	32,759,000	30,100,000	30,765,000
Re-exports . .	4,787,000	5,019,000	3,820,000

Imports of food, drink and tobacco show an increase of over £4,000,000 compared with April, while raw material imports, though lower than in the previous month, have increased by £2,439,000 compared with a year ago.

In the case of exports, manufactured articles show an increase of £1,940,000 when compared with April, 1934, and £1,569,000 in excess of the figure for May, 1933. Exports of raw materials, on the other hand, show only a small increase.

In the first five months of the year imports have risen by £34,186,000 to £301,249,000 compared with the corresponding period of 1933. The greater part of this advance is due to larger purchases of raw materials, which normally indicates increased activity in manufacturing centres.

Exports have increased in the five months by £10,811,000 to £157,608,000, exports of manufactured goods showing a rise of £7,600,000.

More people are at work in the United Kingdom to-day than at any time in the past ten years with the exception of the period from May to December, 1929. The official figures show that in the three weeks between 23rd April and 14th May the total unemployed fell by 57,814, while the number at work increased by 47,000. In the sixteen weeks since 22nd January the total out of work has fallen by 298,392, while the total at work has increased by 313,000—representing an average increase of nearly 2,900 a day.

Since August, 1931, unemployment has been reduced by nearly 650,000 and the number at work has been increased by 822,000. The total number of persons at work on 14th May was 570,000 more than the year before. Most of the principal industries shared in the improvement between 23rd April and 14th May, those in which it was most marked including the following trades:—building, distributing trades, cotton, public works contracting, general engineering, shipbuilding and repairing, and tailoring.

From every point of view the employment returns can be regarded as extremely encouraging. They indicate that the steady improvement in the economic position of the country is continuing, and afford grounds for the belief that further progress may confidently be anticipated.

FINANCE.

NEW COMPANIES.

Kermanshah Petroleum, Ltd.

This concern has been registered as a private company with a capital of £750,000 in £1 shares. The objects of the company are to produce and refine crude oil in the Province of Kermanshah, Persia.

The subscribers are Messrs. John Clark and J. W. Reoch, both of Britannia House, Finsbury Circus, E.C. 2, who will appoint the first directors.

Mr. John Clark is secretary to the Anglo-Persian Oil Co., Ltd., whose registered office is at Britannia House.

Jackson and Kenrick, Ltd.

This company was registered as a private company on 13th June with a capital of £20,000 in 17,100 Ordinary shares of £1 each and 23,200 Founders shares of 2s. 6d. each, to carry on the business of manufacturers of and dealers in steel, iron, copper and brass tubes.

The first directors are: Basil C. B. Jagger, John T. Kenrick and John P. Jackson.

Registered office: The Hayes, Lye, Nr. Stourbridge.

South African Distilleries and Wines, Ltd.

This company has been registered as a public company with a capital of £1,750,000 divided into 750,000 Five

and a-half per cent. Cumulative Preference and 1,000,000 Ordinary of £1 each.

The objects are to acquire all or part of the issued shares of the Castle Wine and Brandy Co., and E. K. Green & Co., both of Cape Town and incorporated in South Africa, and to adopt an agreement with Sir Frank C. Meyer, Mr. H. R. Mosenthal and Mr. E. A. H. Mosenthal.

The registered office is 72, Basinghall Street, London, E.C. 2.

INCREASES IN CAPITAL.

	£
Amalgamated Anthracite Collieries, Ltd.	2,500,000
Jackson Brothers (of Knottingly), Ltd. (Glass Bottle Manufacturers)	144,000
John Bull Rubber Co., Ltd.	180,000
Burma Oil Co., Ltd.	2,500,000
Key Glassworks, Ltd.	190,000
St. Andrew Mills, Ltd. (Paper Manufacturers).	75,000
British Goodrich Rubber Co., Ltd.	1,050,000
Murex Welding Processes, Ltd.	78,750
British Aluminium Co., Ltd.	2,100,000
General Aircraft, Ltd.	50,000

CONTRACTS SECURED.

Orders for China.

Radio Stations.—Standard Telephones and Cables, Ltd., London, have recently received a large order from the Chinese Government for the supply of radio stations. The need for greater communication facilities in China has resulted in the adoption of the present radio communication scheme. It is intended that the larger towns in China shall each have their own transmitting and receiving stations in order that they may be in constant communication by telephone or telegraph with the other big centres; these radio links take the place of costly toll lines for connecting together the local telephone networks. From an engineering point of view, the project has many interesting features. It is, on a smaller scale, almost identical with the world telephony services between England, America, Africa, Australia, etc., with which Standard Telephones have been closely associated. The apparatus will be of the most modern design and

will incorporate many novel features. Careful precautions have been taken to ensure absolute secrecy on the telephone side, and facilities are provided for high speed telegraphy. It is expected that the first part of the project will be completed early next year.

Steel.—The Chinese Government Purchasing Commission has recently purchased about 8,700 tons of steel through the British Steel Export Association.

Railway Material for the Canton-Hankow Railway.—Orders have been placed with the Hunslet Engine Company for four large and four slightly smaller engines for the Kiao-Tsi Railway in North China, and for another train ferry to carry trains across the Yangtze River at Nanking.

Refractory materials for the Continent.

It is understood that General Refractories, manufacturers of heat resisting and heat insulating materials of every description, has recently obtained an important Continental contract.

It is the largest order for United Kingdom refractory materials that has been secured from the Continent for several years past and further contracts of this nature are likely to be obtained in the near future.

United Kingdom Steel Order.

It is understood that a large contract for aeroplane hangers has been placed by the Air Ministry with Redpath, Brown & Co., Ltd., for which approximately 7,000 tons of United Kingdom steel will be required. The structural steelwork will be made partly at the Scottish works of the firm and partly at their Manchester works. There will be 13 hangers, seven to be erected in Iraq, one in Egypt and five in the United Kingdom.

Railway Contracts.

An order has been placed with the Gas Light and Coke Co. for the supply to the Finnish State Railways of 900 tons of creosote oil.

The Egyptian State Railways have placed an order for 20 motor omnibuses with John I. Thornycroft & Co., Ltd., and a similar order for 10 motor omnibuses with Leyland Motors, Ltd.

The Swedish State Railways have placed orders with Swedish importers for the supply of 36,000 tons of locomotive and bunker coal from the United Kingdom, at an approximate total price of £34,000.

Cast Iron Pipes for Egypt.

An order for the supply of cast iron pipes required for the Giza (Cairo) Main Drainage Scheme has been secured by The Stanton Iron Works, Co., Ltd., of Nottingham. The value of this contract is in the region of £18,000.

Boiler Plant for Finland.

An order has been secured by Babcock & Wilcox, Ltd., London, for the supply of the boiler plant required for a sulphate cellulose factory at Vuoksenniska, Finland. Of the total approximate value of £110,000 nearly 70 per cent. will be in respect of special boiler parts and equipment manufactured by Babcock & Wilcox, Ltd.

Motor Ship for Australia.

Swan, Hunter and Wigham-Richardson, Ltd., of Wallsend-on-Tyne, have received an order from the Melbourne Steamship Co., Ltd., for a large twin screw passenger and cargo motor ship for service between the important seaports on the coast of Australia. The ship will have a gross tonnage of over 10,000 and a cargo capacity of approximately 8,500 tons. The main propelling machinery, which is to consist of two sets of Buimeister and Wain type 2-cycle double-acting diesel engines, will be constructed by John G. Kincaid & Co., Ltd., Greenock.

Messrs. Ruston & Hornsby Ltd., Lincoln, have received an order through their Calcutta Agents—Messrs. Martin & Co., for eight 6-cylinder 100 B.H.P. 1,000 R.P.M. Vertical Heavy Fuel Oil Engines. Each will be direct coupled to a Harland 50 K/W. enclosed ventilated type continuously rated revolving field stationary armature Alternator. Switchboards and Feeder Panels of Harland manufacture are also included. These are required for lighting stations on the Eastern Bengal Railway.

THE IRON AND STEEL INDUSTRY.

During May, the Iron and Steel Industry in the United Kingdom maintained a relatively high level of operations and conditions generally continued to develop along favourable lines. While tendencies on the Iron and Steel market have been quieter during recent weeks, the position is still fundamentally healthy, as the slight falling off which has taken place is attributable almost entirely to seasonal factors and the usual recovery in buying is not likely to be delayed for very long. Generally speaking, the works have a substantial tonnage of orders in hand at the present time.

The number of blast furnaces in operation at the end of May was 101, a net gain of 3 compared with the number at the end of the preceding month, 4 furnaces having been blown in and one having ceased operations.

Pig Iron output showed a further increase from 496,300 tons in April to 527,900 tons in May, as compared with 339,900 tons in May, 1933; there was an increase of 3 per cent. in the average daily rate of output in May as compared with the preceding month. The total output of Steel Ingots and Castings in May amounted to 780,000 tons, compared with 716,800 tons in April and 599,600 tons in May last year.

The substantial improvement which has taken place in the position of the iron and steel industry in the United Kingdom, as compared with twelve months ago, is evident from the fact that during the first five months of 1934 the total output of Pig Iron amounted to approximately 2,380,000 tons compared with 1,550,000 tons in the corresponding period of 1933, an increase of some 53 per cent. The total production of steel in the first five months this year was 3,750,000 tons against a corresponding figure of 2,610,000 tons last year, a gain of some 44 per cent.

At the present time the steel industry in the United Kingdom is operating on a level which represents approximately 80 per cent. of its estimated productive capacity. This level is higher than that of any other steel producing country in the world, with the exception of Russia, where no statistics of capacity are available.

The high level of output which has been registered in the steel industry for the current year is due almost entirely to an expansion in demand from the domestic steel consuming trades. Further evidence of the

increased absorptive capacity of the United Kingdom Market is afforded by the statistics of iron and steel imports, which show a big increase compared with last year. In May the iron and steel imports into the United Kingdom totalled 120,200 tons against 125,300 tons in April and 84,900 tons in May last year. In the first five months of 1934, the aggregate imports of iron and steel products amounted to some 612,000 tons compared with 400,000 tons in the corresponding period of last year, an increase of 53 per cent.

This heavy tonnage of imports, the bulk of which comes from the continental countries, has been made possible only in consequence of price cutting and dumping on the part of the International Steel Cartel. The prices quoted by continental steel makers in the United Kingdom have been reduced to such low levels as, in many cases, not to cover the cost of production. The prices at which continental steel bars are being delivered in the United Kingdom are such that when allowance is made for transport charges, customs duties and depreciation in sterling, the net f.o.t. price at continental works is no more than the price which United Kingdom works are paying for scrap.

Although the domestic market continues to absorb the bulk of the iron and steel output, United Kingdom manufacturers are making every effort to expand their export trade and with a considerable measure of success. In view of the numerous barriers to, and restrictions on international trade at the present time it is gratifying to note that they have been successful in increasing their exports during the current year.

The exports of iron and steel products from the United Kingdom in May amounted to 190,600 tons against 165,200 tons in April and 178,600 tons in May last year. During the first five months of the current year the total iron and steel exports aggregated 833,000 tons, compared with 751,000 tons in the corresponding period of last year, an increase of 11 per cent. It is, moreover, encouraging to note that enquiries from certain overseas markets, particularly Russia and China, have been more numerous during recent weeks, giving rise to the anticipation of a further improvement in trade.

As already indicated, the domestic demand continues to be the dominating feature of the market. Business in Pig Iron is active and, in addition to accounting for the whole of the current output, has led to a reduction of

stocks. While business during recent weeks has been confined to small tonnages in the main, it is expected that there will be an expansion of forward buying before very long, owing to the fact that a number of long period contracts are due to expire at the end of June. Export trade is still poor and keen competition is encountered from continental producers.

While the production of semi-finished material continues on an improved scale new orders have recently been fewer, but this decline is attributable to some extent to the fact that certain large consumers have covered their requirements for some time ahead. (Generally speaking, the makers have sufficient contracts in hand to keep them well occupied for a considerable period.

The domestic demand for finished steel products continues to be active and makers have a comparatively satisfactory tonnage on their order books. Orders from the engineering trades in general are good and the recent improvement in the demand from the ship-building yards is continuing, although there is still considerable room for further expansion.

MACHINE TOOLS.

Three-head plano-milling machine.—Darling and Sellers Ltd., Airedale Works, Keighley, have recently introduced a 3-head plano-milling machine. It admits up to 4 feet 10 inches wide between the uprights; up to 4 feet 8 inches between the horizontal spindle noses; and up to 2 feet 9 inches between the vertical spindle nose and the table. The T-slotted table, which is 7 feet by 4 feet, slides on square-edged guide-ways of a substantial box-section bed. Six rates of automatic table traverse are provided in each direction, as well as a constant-speed quick power traverse. Interlocking levers and trip dogs are provided to the feed mechanism of the table, which is traversed by means of a revolving nut in the bed and a fixed screw on the table, ball thrust washers taking the end pressure.

The vertical-spindle head mounted on the cross slide has a quick power traverse movement and six rates of self-acting feed, operated by means of a lever on the gear box at the end of the cross slide. The two horizontal spindle heads have vertical hand adjustment only, on the uprights. All the spindles are reversible and run in phosphor-bronze conical necks carried in cylindrical sleeves.

The spindle noses are bored to receive cutter shanks and have recessed slots for driving purposes. The driving part of each spindle is 3 inches diameter and splined, and has rigidly mounted upon it a large diameter flywheel to obtain a steady cutting action. A scale on the spindle sleeve facilitates quick setting, the adjustment being obtained by hand wheel and worm gearing.

The machine is driven by Texropes from a 15 h.p. constant speed motor through a multi-plate clutch. The first driving shaft transmits motion to a gear box giving 12 spindle speeds, and also to the feed gear box with its 6 changes, any of which can be used in conjunction with any of the spindle speeds. The control levers are centralized and duplicated on both sides of the bed.

The approximate weight of the machine is 16 tons.

CINEMATOGRAPHY.

The Board of Trade announce that the examination of the returns for the year ended 30th September, 1933, furnished by exhibitors under the Cinematograph Films Act, 1927, shows that during that period the aggregate length (including repeated performances) of registered films exhibited in cinematograph theatres in the United Kingdom was 34,100 million feet. The total length of United Kingdom films exhibited was 8,100 million feet or 23·7 per cent. of the whole, as compared with 21·6 per cent. for the year ended 30th September, 1932. These figures do not include news reels and travel and other films which are not required to be registered under the Act.

The aggregate length of long films (*i.e.*, films of 3,000 feet and over) included in the above figures was 30,100 million feet, of which 7,900 million feet or 26·2 per cent. were British, as compared with 24·3 per cent. for the year ended 30th September, 1932.

Under the Act the minimum proportion of United Kingdom films which exhibitors were required to show during the year ended 30th September, 1933, was 12½ per cent.

THE BRITISH FILM INSTITUTE.

The British Film Institute, 4, Great Russell Street, London, W.C. 1, was founded in October, 1933, as a means of furthering effective co-operation between those who make, distribute and exhibit films on the one hand,

and all who are interested in the artistic, educational and cultural possibilities of using films on the other. The proposal to form such an Institute became feasible when the Government provided through the Sunday Performances Act (1932), for the establishment of a Cinematograph Fund, to be used for the development of the film as a means of entertainment and instruction. The Institute has neither been set up nor is controlled by the Government, though its aims and constitution have been approved by the Board of Trade, which has given it the status of a non-profit-making corporate body. An Advisory Council has been formed to assist in the work of the Institute consisting of representatives of science, art, music, literature, education, social movements and the film on its artistic, technical and commercial (both professional and amateur) sides. In addition various Government Departments have appointed representatives.

The British Film Institute exists generally "to encourage the use and development of the cinematograph as a means of entertainment and instruction". More specifically, its objects are:—

- (1) To act as a clearing house for information on all matters affecting films at home and abroad, particularly as regards education and general culture.
- (2) To influence public opinion to appreciate the value of films as entertainment and instruction.
- (3) To advise educational institutions and other organisations and persons on films and apparatus.
- (4) To link up the film trade and the cultural and educational interests of the country.
- (5) To encourage research into the various uses of the film.
- (6) To establish a national repository of films of permanent value.
- (7) To provide a descriptive and critical catalogue of films of educational and cultural value.
- (8) To advise Government Departments concerned with films.
- (9) To certify films as educational, cultural or scientific.
- (10) To undertake similar duties in relation to the Empire.

TEXTILES.

COTTON.

The improvement in the tone of the market which was felt before Whitsun was maintained after the holidays, and a considerable volume of enquiry continued to come in from many markets. The steadiness of raw cotton at the beginning of June encouraged buyers to place orders, and some manufacturers became booked up for several months ahead. As a result of this and of an abrupt and somewhat erratic rise of raw cotton prices, demand in the middle of June tended to slacken, and most of the business booked was in small amounts, as if buyers were hoping for a reaction.

In the yarn market, the suspension of the Royton Agreement, covering coarse American yarns, was followed by heavy sales of these counts at low prices. In other counts business is not reported to be good; prices have risen with each rise in the price of raw cotton, and only small orders have been booked.

Much interest has been aroused by a scheme drawn up by a sub-committee of the State of Trade Committee of the Federation of Master Cotton Spinners' Associations, which aims at remedying many of the ills which afflict the spinning industry. The fact that price agreements covering the whole of the industry have been made, and, with one exception, held during the past eleven months, suggests that this scheme should stand a better chance of being accepted than others which have been put up before. The Committee propose a voluntary association of spinners of single cotton yarn, whose objects shall be the establishment of a closer relation between production and demand; assisting the expansion of export trade; the further development of amalgamations, in the interest of greater unity and vigour of policy; and the reduction of surplus spindleage.

Among the more noteworthy points in the suggested programme for this association are the fixing of production quotas; the adoption of a uniform yarn sales contract; the power of compelling members, by law, to accept its decisions; and the authority to levy money on its members for the purpose of immobilizing surplus spindles and so relieving the industry from the burden which these impose upon it.

The China market awoke during the middle of June to greater activity than of late, but the orders booked, which are chiefly for poplins and fancies, are by no means so large as the number of enquiries might have led dealers to hope.

Dyed fancies are being shipped to Singapore and the Straits Settlements. According to one Manchester shipper several firms engaged in the Straits trade booked more orders in the fortnight following the announcement of quotas for the Colonies than they had done in the previous twelve months. Enquiries are being received too for old standard lines which had not been bought for many months.

The Near East and Egypt have bought tanjibs and bleaching cloths in small quantities, and fair quantities of these latter have been booked for West Africa.

The South American markets have not been very active, but some moderate orders have been placed, especially from the Argentine and Colombia, for dyed goods and poplins.

On the Continent, Switzerland has been the most prominent buyer, taking cambrics and muslins and embroidery cloths.

The improvement which has been reported in cloth sales for the past few weeks has not yet had time to appear in the export figures, which still reflect the dull markets of the earlier part of the year. The statistics for May, compared with April and with last May, are as follows:—

	<i>May.</i> <i>1934.</i> <i>1,000 lbs.</i>	<i>April.</i> <i>1934.</i> <i>1,000 lbs.</i>	<i>May.</i> <i>1933.</i> <i>1,000 lbs.</i>
Grey yarns	10,100	9,688	9,524
Dyed and bleached yarns	1,172	1,051	1,392
	<i>1,000</i>	<i>1,000</i>	<i>1,000</i>
<i>Piece Goods.</i>	<i>sq. yds.</i>	<i>sq. yds.</i>	<i>sq. yds.</i>
Grey	25,755	30,128	30,688
Bleached	46,232	49,266	54,219
Printed	29,857	26,440	30,982
Piece-dyed	42,490	41,839	44,902
Yarn-dyed	6,811	5,902	7,946
Total piece goods	150,645	153,575	168,687

LINEN.

Price quotations for linen yarns remain steady without, however, very much business being transacted. Exports of flax and hemp yarns for the month of May were valued at £75,746 as compared with £57,097 and £42,498 respectively for May, 1933 and 1932.

Exports of piece goods during May maintained the improvement of recent months, reaching the total of £402,406, which is the highest monthly figure for piece goods since May, 1930.

The U. S. A. market for piece goods seems to have recovered from the temporary set-back which it received a few months ago. The figures for the past 10 months are as follows:—

1933.	£	1934.	£
August . . .	116,118	January . . .	128,881
September . . .	143,103	February . . .	110,341
October . . .	156,589	March . . .	201,484
November . . .	110,997	April . . .	154,822
December . . .	80,846	May . . .	189,505

The figures for May, 1932 and 1933 were, respectively, £111,649 and £114,521. The improvement in piece-goods exports to Latin American countries has been maintained with the exception of Brazil, the exports to which totalled £6,376 during May.

Damask table linens were exported during May to the value of £48,537 as against £38,324 and £62,670 respectively in May, 1933 and 1932. There was a slight improvement in export of handkerchiefs. Figures for May, 1934, 1933 and 1932 were £20,779, £19,236 and £21,820.

Imports of linen manufactures into the United Kingdom for May, 1934, 1933 and 1932 were £17,914, £22,061 and £33,777 and exports from the United Kingdom for the same periods were, respectively, £579,006, £436,109 and £440,594.

The total values of linen goods exported during the five months ended 31st May, 1934, 1933 and 1932 were £2,591,619, £2,190,833 and £2,362,439, and the quantities of piece goods exported during the same periods were 37,611,000, 31,377,000 and 32,212,000 square yards.

WOOL.

The exports of semi-manufactures and tissues continue to expand and the figures for May, and for

the five-month period January-May this year are larger under all headings than in the corresponding periods of last year. Nearly 6 million square yards more woollen and worsted piece goods have been exported up to 31st May this year than in the first five months of 1933; nearly 43 per cent. of the total was sent to Empire markets, of which Canada is easily the best market, followed by South Africa. The Argentine has been the best foreign market this year followed by Denmark.

Conditions in the piece goods trade are quiet at present and much improvement is not looked for until stability in prices of wool and semi-manufactures has been restored.

Business in the heavy woollen district of Dewsbury has not been so good of late in sympathy with the decline in all sections of the trade.

Some South African repeat orders for fine serges, whipcords and cream goods have recently come to hand and a few serges and fancy worsteds were shipped to Australia in May despite heavy tariffs. A few buyers from some of the Near Eastern markets are stated to have visited Bradford and bought stock lots of botany serges and fancy worsteds.

The Wood Record and Textile World commenting in its issue of 7th June, 1934, on the position of the manufacturing section states:—

“ It is manifest, however, that the home market alone cannot absorb production, and the outlook would be considerably brighter if there were better prospects in the overseas markets. British exports of woollen and worsted fabrics have steadily increased for several months past, but although this expansion is gratifying it must be remembered that the export trade had fallen off to such an extent that even the recovery of recent months has only brought back a fraction of what was lost. Unfortunately, the outlook in most countries is still very obscure and economic conditions do not hold out much hope of rapid improvement in purchasing power. Moreover, the financial stringency is being experienced to the fullest extent in all producing countries, so that in every case there is keen competition for available markets to absorb surplus production. In these circumstances it is unlikely that development in any direction will be spectacular.”

PAPER.

A moderately good tone is apparent in the paper industry, but there is not quite so much activity as there was during the earlier months of this year.

The exports of paper, cardboard, etc., for the first five months of this year were of a higher value than those during the same period of 1933, but fell short of the 1932 figure. Particulars are as follows:—

	£
1934 first 5 months	2,517,693
1933 first 5 months	2,419,892
1932 first 5 months	2,771,118

The following statement gives details for the various sections:—

Section	Value of Exports.		Increase.	Decrease.	Inc. or Dec. per cent. over 1933.	
	1934. £	1933. £	£	£	Inc.	Dec.
Newsprint in rolls	294,145	360,017	—	86,769	—	22.9
Other printing paper	582,716	511,250	71,466	—	14.0	—
Writing paper in large sheets	187,894	168,639	19,255	—	11.4	—
Wrapping	176,994	136,292	40,612	—	29.0	—
Cardboard and mill-board	101,833	77,033	24,829	—	32.0	—
Stationery	109,513	1.3,482	—	3,919	—	3.4
All other sorts	1,004,636	1,032,309	32,327	—	3.0	—
Total	2,517,693	2,419,892	97,801	—	4.0	—

Edward Lloyd Ltd., of Sittingborne and Kemsley Kent, who are large producers of newsprint paper have recently commenced the building of an extension to their Kemsley mill for the accommodation of a new machine for making newsprint. It is claimed that the machine to be installed will be the largest in the world for the production of this class of paper. It will have a wire width of 320" to run at 1,400 ft. a minute and will be capable of a production of 1,000 tons of paper per week. A super calendar having a roll of 310 inches will operate in conjunction with the machine.

POTTERY AND GLASSWARE.

Recent unemployment figures published for the pottery trade indicate a further slight improvement, the number of operatives either out of work or on short time being 11,016 compared with 11,263 in April and 15,840 for the corresponding period twelve months ago.

The following are details of the exports of pottery for the first five months of 1934, together with comparative figures for the corresponding period of 1933.

<i>Class.</i>	<i>Value of Exports.</i> <i>1934.</i> £	<i>1933.</i> £	<i>Increase.</i> £	<i>Increase.</i> <i>per cent.</i> <i>over 1933.</i>
Tiles (all classes) .	82,885	80,983	1,902	2·3
Sanitary ware . .	248,564	237,980	10,584	4·4
Chinaware . .	88,007	70,839	17,168	24·2
Electrical porcelain .	39,260	22,694	16,566	73·0
Earthenware of all other descriptions .	600,261	557,137	43,124	7·7
Refractory goods not otherwise specified .	97,438	87,606	9,832	11·2
All other descriptions	27,477	31,014	3,537 (Dec.)	11·4 (Dec.)
Total .	1,183,892	1,088,253	95,639	

Steady conditions have been maintained in the glass industry during the past month.

In the following table will be found details of the exports of glass and glassware for the first five months of 1934, together with comparative figures for the corresponding period of 1933.

<i>Class.</i>	<i>Value of Exports.</i> <i>1934.</i> £	<i>1933.</i> £	<i>Increase.</i> £	<i>Increase</i> <i>per cent.</i> <i>over 1933.</i>
Scientific glassware .	32,568	27,483	5,085	18·5
Domestic and fancy glassware . . .	66,279	55,167	11,112	20·1
Plate and sheet glass .	319,619	276,394	43,225	15·9
Glass bottles and jars .	93,306	113,391	20,085 (Dec.)	17·7 (Dec.)
All other kinds of glass ware	40,466	36,354	4,112	11·3
Total .	552,238	508,789	43,449	8·5

AVIATION.

NEW BRITISH AIRCRAFT.

Two great flying displays, the fifteenth Royal Air Force Display on the last day of June and the third Trade Display and Exhibition by the Society of British Aircraft Constructors held two days later, provided un-

rivalled opportunity for study of modern British aircraft and aero-engine design and construction.

Technical interest in the Service Display centres each year in the New Type Aircraft Park. Sixteen different types of aeroplane were listed for inclusion on June 30. The majority of them, together with many other machines, were also engaged for the Trade Display, when the Society, as in 1932 and 1933, entertained between a thousand and fifteen hundred guests from all parts of the world.

New single-seater fighters designed primarily for the protection of London from aerial attack, general-purpose aeroplanes which illustrate the latest forms of the adaptable and peculiarly British type of military flying machine that has been evolved to meet the needs of Royal Air Force police and patrol work in the Middle East, improved models of twin-engined bombing 'planes, a "direct control" autogiro, an amphibian, and a biplane built for use with the Fleet Air Arm that embodies a novel kind of buoyant fuselage, made up fifteen of the sixteen machines. The sixteenth was the Houston-Westland biplane that made last year the first flights over Everest, world's highest mountain, and over Everest's scarcely less lofty neighbour, Kinchinjunga.

Immediately attractive were the group of five single-seater fighters. They are built for great speed and rate of climb; in essentials they consist in the minimum accommodation necessary to carry man, guns and ammunition efficiently about the business of intercepting, catching and destroying invading bombing 'planes. The British Service employs two distinct classes of single-seater fighter aircraft the "interceptor", whose main purpose is adequately described in its title, and the "general-purpose" or day-and-night fighter, whose task may be summed up in the two words "combat patrol". Aircraft in this latter category carry considerably more load in fuel and equipment than the interceptor, enabling them to remain aloft for longer periods and thus to patrol effectively wide sectors of the air.

The new interceptor is the Hawker high-speed "Fury" powered with a Rolls-Royce "Goshawk III" 600 h.p. supercharged engine. In an earlier form this machine was officially timed at a maximum level speed, with full load on board, of 250 miles an hour; during the past few months it has been rebuilt and fitted with the new engine. Details of its performance remain an

omical secret, but its top speed may be assumed to be higher than the 250 m.p.h. of its immediate forerunner. The engine is cooled by steam.

Three of the four day-and-night fighters have steam-cooled motors; in two of them, the Supermarine "Spitfire" and the Hawker biplane, the condensers are located in, and form part of, the leading edges of the wings themselves, which means that the condensers offer no parasitic resistance to movement through the air and that performance is correspondingly enhanced. The "Spitfire" is an all-metal monoplane, in which the wings, set low on the fuselage, form a cantilever structure without external bracing wires or struts. Incidentally, it represents the first essay in fighter design of Mr. R. J. Mitchell, the designer of the racing seaplanes which won the Schneider international trophy for Britain in 1927, 1929 and 1931; for that reason its performance is awaited with unusual interest. And if the "Spitfire" justifies its appearance it should indeed be fast. Like the Hawker interceptor, it has 600 h.p. "Goshawk" engines.

The Hawker day-and-night fighter has been built by the company as a private venture, and not to Air Ministry order. It derives power from a 600 h.p. "Goshawk" engine. Next in the list, a Westland biplane, possesses great technical interest because it is fitted with shaft drive between the "Goshawk VIII" 665 h.p. engine and the airscrew. This idea arose from the need to provide unrestricted view for the pilot, who sits high up between airscrew and engine. To give him clear outlook backwards the upper wings are swept down into the fuselage, and when he is seated with his chair in the normal position he can also see underneath the top plane to port and starboard. The Westland craft, which is constructed entirely of duralumin, is the first machine of its type to be flown successfully with shaft drive.

One of the new Bristol "Perseus" sleeve-valved engines is installed in the Bristol "Bulldog IV" fighter, which is the latest model of the well-known single-seater fighter that has been standard equipment of the British air force and of certain Dominion and foreign air forces for several years past. The "Perseus" motor, developing greater power with lower consumption of fuel and oil than has ever been attained in a comparable poppet-valved engine, promises increased performance of many types of civilian and military aeroplanes and, because of

its simplicity of structure and small number of moving parts, the practical elimination of "maintenance" work.

Another batch of five machines at the Royal Air Force Display illustrated modern tendencies in the building of "general-purpose" aircraft. One of the group was a monoplane—the Westland "private venture" craft built for general-purpose, bombing and torpedo-carrying employment on the lines of an Air Ministry specification numbered G. 4/31. Diving bombing, the new technique of bomb-aiming, in which the aeroplane itself is directed at the target in a nearly vertical "terminal velocity" dive, largely governed the design. Thus, the machine has the pilot seated in front of the wing, giving him the best possible view forward and downward. Power is supplied by a Bristol "Pegasus" 750 h.p. engine. The performance, which cannot be disclosed, is extremely good; an interesting structural detail is that the struts which brace the wings externally are shaped to contribute to the total lift and thus add to the effective wing area.

Two more versions of the world-famous "Hart" biplane were on view. One of them had the new Napier-Halford "Dagger" engine, which has twenty-four cylinders arranged in four banks of six like the uprights of the capital letter "H". It is known to be capable of maximum level speed in the neighbourhood of 200 miles an hour. The second "Hart" modification employs a 750 h.p. "Pegasus" motor, and is built for high-speed day-bombing duties. Armstrong Whitworth and Fairey have produced the two remaining machines in this group; both are designed to carry exceptionally comprehensive load of equipment and fuel for "general-purpose" duties, and each derives power from a Siddeley "Tiger" 700/770 h.p. engine.

The Blackburn T.S.R. biplane, built for torpedo-bombing gunnery-spotting and reconnaissance work with the Fleet, has an ingeniously contrived, buoyant fuselage. The body is a monocoque structure in which the outer metal skin takes much of the loads and stresses imposed in flight, and its after-part consists in a number of closed watertight compartments which provide adequate buoyancy in the event of a forced descent on the water. The flotation bags usually carried in the fuselage of machines built for naval work are thus rendered unnecessary, and the useful load may be increased.

Alterations to the engine nacelles, which are improved in shape and raised eighteen inches, and total enclosing of the pilot's cockpit have increased the performance of the Handley Page "Heyford" biplane which is now going into service with some R.A.F. units. An important detail also provides the chief reason for inclusion of the Boulton and Paul "Overstrand" twin-engined day-bomber, which is fitted with a mechanically-operated gun-turret of new and highly efficient design. The device is planned to enable the forward gun, mounted in the nose of the fuselage, to be trained on a target with rapidity and accuracy, no matter what may be the speed or the altitude of the aeroplane. The gun and the whole of the turret rotate together. No more important device has been added to the equipment of the air-gunner since the invention of the synchronizing gear which made possible fire through the disc swept by the airscrew.

Simple control and wide speed range are exemplified in the Avro "Rota", the direct control "windmill" plane which is now being built in large numbers by the Avro company. In this machine rotating vanes take the place of the fixed wings of the normal aeroplane. No rudder, elevators, or ailerons are used: control is gained simply by movement of a hanging lever that alters the angle of tilt of the rotor axis. The minimum level flying speed of the "Rota" is 15 m.p.h. and the maximum speed 115 m.p.h. or a speed range of nearly eight to one—an astonishing achievement. Machines of this kind are to go later in the year for experimental employment to the six "army co-operation" squadrons of the Royal Air Force.

Outwardly the Saunders-Roe "Cloud" amphibian chosen for the display is exactly like the standard craft employed for navigational instruction at the R.A.F. Seaplane base at Calshot, but structurally it incorporates one important modification in the form of monospar wings. As its name implies the monospar system employs only one main spar instead of the usual two spars. Considerable saving in weight, with resultant increase of useful load, is the chief advantage claimed for monospar construction.

The Houston-Westland biplane, which has its place in history as the first machine to fly over Mount Everest, has been equipped since that adventure with a later type of "Pegasus" engine. Its performance in the new

guise is impressive, though it has probably lost something in attainable ceiling and can no longer reach the 35,000 feet level—a world record for an aeroplane carrying more than one occupant—that was attained with ease in full-load trial before the Everest flight. Its maximum level speed, attained at a level of 6,500 feet, is now no less than 177 miles an hour, which must be considered extremely good for a craft that carries an exceptionally big load and lands at the relatively slow speed of 55 m.p.h.

CATALOGUE LIBRARY.

The undermentioned catalogues, relating to United Kingdom manufacturers, have recently been received and may be consulted by *bonâ fide* firms or individuals at the Office of His Majesty's Senior Trade Commissioner in India, Fairlie House, Fairlie Place, Calcutta.

<i>Names and addresses.</i>	<i>Descriptions.</i>
Thos. W. Ward, Ltd., Albion Works, Sheffield.	Reconditioned machinery.
Josiah Parkes & Sons, Ltd., Union Works, Willenhall.	Lock manufacturers.
Runbaken Magneto Co., Ltd., 280, Deansgate, Manchester.	Motor accessories and equipment.
*The British Piston Ring Co., Ltd., Holbrook Lane, Coventry.	Piston Castings, Piston Rings and Cylinder Liners.
Duke & Ockenden, Ltd., 126, Southwark Street, London, S.E. 1.	"Dando" Pumps and Water Supplying Machinery.

The catalogue marked with an asterisk has also been received in the office of His Majesty's Trade Commissioner, 3, Wittet Road, Ballard Estate, Bombay, where it may also be consulted by *bonâ fide* firms or individuals.

In addition, His Majesty's Trade Commissioner, Bombay, has recently received the undermentioned catalogues:—

<i>Names and addresses.</i>	<i>Descriptions.</i>
Bardsleys Barrows, 196, Bergholt Road, Colchester.	Shovels, Spades, Forks, Trolleys, Trucks, etc.
Samuel Fox & Co., Ltd., Associated with The United Steel Co., Ltd., Stockbridge works, Sheffield.	Stainless Steel

TRADE ENQUIRIES.

The names of the United Kingdom firms referred to in the enquiries mentioned below will be furnished to reputable firms on application to His Majesty's Senior Trade Commissioner, Post Box No. 683, Fairlie House, Fairlie Place, Calcutta.

No. 481-34.

A firm in the United Kingdom specialising in the manufacture of Synthetic Resins, are desirous of appointing an agent in this market, who is in a position to obtain business for them on a commission basis from paint, varnish and printing ink manufacturers.

No. 654-34.

A United Kingdom firm of manufacturers of paints, varnishes, distempers, cellulose lacquers, enamels, etc., desire to appoint an Agent in Calcutta. The firm manufacture medium to good quality materials and are not interested in the very cheap lines which are offered in the bazaars.

No. 661-34.

A United Kingdom firm, who are the export agents of a Non-Ring firm of United Kingdom manufacturers of Electric Lamps, desire to secure the services of a Sole Distributor in Calcutta.

H. M. TRADE COMMISSIONERS IN INDIA.

Calcutta—

Sir Thomas M. Ainscough, C.B.E.,
*His Majesty's Senior Trade Commissioner in
India and Ceylon.*

Mr. R. B. Willmot,
His Majesty's Trade Commissioner at Calcutta.
Post Box No. 683, Fairlie House, Fairlie Place.
Telegraphic Address.—"Tradcom, Calcutta."
Telephone No.—"Calcutta 1042."

Bombay—

Mr. W. D. M. Clarke,
His Majesty's Trade Commissioner at Bombay.
Post Box No. 815, 3, Wittet Road, Ballard
Estate.
Telegraphic Address.—"Tradcom, Bombay."
Telephone No.—"Bombay 23095."

Ceylon—

Imperial Trade Correspondent,
The Principal Collector of Customs, Colombo.

With Compliments.

AUGUST



1934

The
Commercial Bulletin

*A Monthly Review of Official and other
announcements relating particularly
to British Export Trade.*

Issued by
**HIS MAJESTY'S SENIOR TRADE COMMISSIONER
IN INDIA AND CEYLON.**

**FAIRLIE HOUSE,
FAIRLIE PLACE,
CALCUTTA.**

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BRITISH INDUSTRIES FAIR, 1935.

The British Industries Fair (except the Engineering and Hardware Section referred to below) will open at Olympia and the White City on Monday, the 18th February, and close on Friday, the 1st March. Exhibits of the lighter trades will be presented as usual at Olympia, while the Textile and Furniture Sections of the Fair will again be organised at the White City. The Textile Section will represent the cotton, woollen, silk, artificial silk and linen industries, and other branches of textile manufacture.

The Birmingham Chamber of Commerce, which is responsible, under the auspices of the Department of Overseas Trade, for the organisation of the Section of the Fair held in Birmingham, have decided that the month of May is likely to be more favourable for the sale of the products of the heavier industries. This has led to the necessity for giving this Section of the Fair a more specific title. The title which has been chosen is "The Engineering and Hardware Section of the British Industries Fair." It will open at Castle Bromwich, Birmingham, on Monday, the 20th May, and close on Friday, the 31st May.

A list of Trades to be included in the Fair is given below:—

London—February 18 to March 1, 1935.

Brushes and Brooms.

Chemicals, Drugs, Perfumery and Chemists' Supplies.

Cutlery, Jewellery, Electro-Plate, Silverware, Watches and Clocks.

Pottery and Glassware—

China, Earthenware and Stoneware.

Glass and Glassware.

Fancy Goods.

Leather, Leather Goods and Travelling Requisites.

Sports Goods, Toys and Baby Carriages.

London—February 18 to March 1, 1935—contd.

Stationery, Paper, Printing and Publishing.

Office Appliances, Metal Office Furniture.

Printing, Bookbinding, etc., Machinery.

Musical Instruments, Gramophones and Wireless Apparatus.

Scientific, Photographic, etc.

Plastics.

Coin-Operated Automatic Machines.

Foodstuffs, Beverages and Tobacco.

Furniture, etc.

Textiles and Clothing—

Yarns and Fabrics.

Made-up Goods—

Women's Wear.

Men's Wear.

Domestic and Decorative Textiles.

General and Sales Services Section.

Engineering and Hardware Section—Birmingham (Castle Bromwich)—May 20 to May 31, 1935.

Hardware, Ironmongery and Brassfoundry.

General Heating and Cooking (mainly by solid fuel).

Gas.

Building and Decoration, Public Works and Roads.

Metals (Ore and Semi-manufactured, excluding precious metals).

Transport.

Mining.

Engineering.

Electricity.

Services.

GENERAL.

In spite of the usual seasonal tendency towards the decline in overseas trade in the summer months, the Board of Trade returns for June in comparison with May show only a slight fall, while as compared with June, 1933, there were large increases. Imports were

£7,395,906 more than in June last year and exports of United Kingdom goods were £639,065 less than in the previous month, and £3,654,323 more than in the corresponding month of 1933.

Taking the figures for the first six months of the year, of the total increase of £41,862,297 in imports as compared with the corresponding period of last year, raw materials contributed £24,759,988, and of the total rise of £14,414,028 in exports, manufactured goods accounted for £10,752,715.

Substantial increases are shown in the exports of non-ferrous metals, cutlery and hardware, electrical goods, machinery, wool textiles and chemicals and also appreciable increases in coal, pottery, iron and steel, apparel and vehicles.

The Ministry of Labour state that on June 25th last there were approximately 10,163,000 insured persons, aged 16 to 64, in employment in the United Kingdom. This was 419,000 more than the year before. It is believed that the steady improvement in the economic situation is continuing and that the July figures are likely to reflect this.

ROYAL ACADEMY EXHIBITION OF BRITISH ART IN INDUSTRY.

The Exhibition, organised by the Royal Academy of Arts and the Royal Society of Arts, which will be held at Burlington House, Piccadilly, London, W., January-March, 1935, will be of considerable importance to United Kingdom industry.

Aim of the Exhibition.

The aim of the Exhibition is threefold:—

(1) To impress upon the public as well as the overseas visitor both the importance of beauty in the articles they purchase and the fact that United Kingdom manufacturers, in co-operation with British artists, are capable of producing such articles in all branches of industry.

(2) To enable United Kingdom manufacturers to study the full extent to which British artists are capable of supplying original, attractive, and technically suitable designs for the production of articles

by mechanical means, and to turn the attention of British artists to design in relation to industry.

(3) To show that a more frequent association of the designer's name with the article produced from his design can be of great advantage in promoting demand.

Range and Selection of Exhibits.

The classes of articles to be included in the Exhibition have been grouped provisionally into a number of sections. An Advisory Committee has been formed for each section with the co-operation of the industrial organisations concerned. With these Advisory Committees the Executive Committee will arrange the method of the preliminary selection from the articles submitted. The final selection is reserved to the Executive Committee, which is composed of members of the Royal Academy and Royal Society of Arts, who are in no way interested as industrial exhibitors.

General Conditions of Exhibition.

No articles shall be considered for exhibition except such as are of original, contemporary British design and manufacture. Exhibits must be designed by practising artists or designers who are of British nationality and established or employed within the United Kingdom. Works shall be considered for inclusion in the Exhibition only if they have been manufactured within the United Kingdom by a British individual, firm or company. A guarantee by the manufacturer to this effect shall accompany each article submitted, together with an indication of the source of the principal materials used. Wherever possible, preference will be given to work manufactured from materials originating in the British Empire.

In the selection of exhibits primary importance will be attached to decorative value, based on originality of design, attractive finish and suitability of material and method of manufacture to purpose.

The above particulars have been extracted from a leaflet issued by the Advisory Committee for one of the sections of the exhibition.

THE WORLD'S COIN FACTORY.

The Royal Mint in London is the factory in which coins are made for nearly all the world. Coins are at

present being made for Soviet Russia, Poland, Greece, Yugoslavia, Palestine, the Irish Free State and for many parts of the British Commonwealth of Nations. The Mint has never before enjoyed such activity as now, partly because of its remarkable mechanical efficiency, and partly because the British artists employed to design the coins can offer work of an originality and beauty which cannot be surpassed by any other country. Bulgaria has just ordered silver coins to the value of £600,000; and the design for them has been executed by a British artist, Mr. Percy Metcalfe.

The great activity of the London Mint began soon after the war, when there was the very pressing problem of renewing the coinage of many of the belligerents and of neutral countries. The experience so gained has proved to be invaluable. Special attention was given to design, and artists of imagination were asked to submit their ideas. The machinery of the Mint is as near perfection as it can be: it melts, rolls, cuts, trims, weighs, washes, stamps, polishes and counts the coins into bags—all with astonishing accuracy. For sheer beauty and accuracy of the finish of its products, there is no factory in the world which can equal it.

INDUSTRIAL GROWTH.

The transformation, in the course of one year, of a small English village into a well organised Garden City, with prospects of speedy development into a large town, may be taken as an illustration of how swiftly industrialism may change the entire natural surface of large tracts of land. The village in question is Corby in Northamptonshire, which at present boasts 1,800 inhabitants. Being built on a bed of ironstone, the village comprises the steel works of Stewarts & Lloyds, Ltd., the Directors of which have decided to build great extensions. Calculated to cost about three million pounds, the extensions will be finished within a year, and the works will then employ 2,500. To house their employees the firm is now building a new Garden City at the rate of 75 houses per month, and is laying out sports and recreation grounds in connection with their workers' club.

To prevent a repetition of that deplorable overcrowding which accompanied the early English industrial era, the District Council within whose confines the Steel Works are situated have already drawn up a town plan—

ning scheme for a population of 30,000. As before the extension the Steel Works controlled ironstone reserves estimated at 500 million tons, and the new extension will enable the firm to exploit fully their mineral wealth, there is every likelihood that Corby, a town of 30,000 inhabitants, will be an established fact in the near future.

WORLD'S SMALLEST CAMERA.

What is claimed to be the world's smallest camera has just been put on the market by the Coronet Camera Co., Summer Lane, Birmingham.

The camera measures only $2\frac{1}{2}'' \times 1\frac{1}{4}'' \times 1''$, and can be carried in a waistcoat pocket or in a lady's handbag, and yet it takes perfect pictures 18 mm. by 13 mm., which are enlarged to the usual size. The tiny spool of film used in the camera takes six exposures.

The firm's factory has been extended to manufacture this new camera, and plans are in hand to produce them at the rate of 10,000 a day. The camera will be retailed at a price of five shillings.

EXPANSION OF GENERAL REFRACTORIES, LTD.

General Refractories, Ltd., of Sheffield, has further enlarged its resources by acquiring the business of coal, ganister and fireclay mining carried on for over fifty years by Joel Bramall & Co., Bradshaw Mines, Hazlehead, near Penistone.

It is considered that the ground ganister connection of this firm will be a useful addition to the large business in this line at present carried on by General Refractories which at the same time gains an additional source of supply of raw materials of high quality.

General Refractories, which concern manufacture of heat resisting and heat insulating materials of every description, has also secured control of the old-established silica brick business of N. B. Allen & Co., Hirwain, near Swansea.

Over fifty years ago N. B. Allen & Co. were the first company in the United Kingdom to make silica bricks for use in the building of steel and glass furnaces. The bricks produced by the company have been regularly exported to Germany, Belgium and other continental countries.

FINANCE.

NEW COMPANIES.

New Aeroplane Company.

A company has been formed to take over the business of Ainspeed, Ltd., aeroplane manufacturers, and in connection therewith an issue of 400,000 5s. Preferred Ordinary shares has been made.

It is understood that Swan Hunter and Wigham Richardson, Ltd., the Tyneside shipbuilding company, is to take a substantial share interest in the new company.

Harrap Bros. (Sindar Wools), Ltd.

This is a private company formed with a capital of £90,000 in £1 shares in order to acquire the business of worsted and cotton spinners carried on by F. Harrap at Beetive Mills, Alverthorpe, Wakefield, and elsewhere, as Harrap Bros., Ltd., and to take over and use all trade marks used by F. Harrap in connection with the business and particularly the word "Sirdar."

George Stark & Sons (1934), Ltd.

This firm has been registered in Edinburgh as a public company with a capital of £80,000 in 50,000 Preference shares of £1 each and 60,000 Ordinary shares of 10s. each, to acquire the business of George Stark & Sons, Ltd., and to carry on the business of enamelled and coated paper makers, manufacturers of dyes and colours, etc.

The directors are: George Stark Christie, John Stark Christie, Andrew Christie, A. Christie, Frederick Christie, Frederick C. Christie.

Registered office: 188, North Woodside Road, Glasgow.

Gas Consolidation, Ltd.

The first directors of this company which was recently registered with a capital of £500,000, divided into 250,000 Four and a half per cent. Cumulative Preference shares of £1 each and 250,000 Ordinary shares of £1 each, have now been appointed. They are Major Julian Day, Mr. F. H. James (managing director of

Imperial Continental Gas Association) and Major-General G. P. Dawnay.

W. Klingenstein & Co., Ltd.

This firm was registered as a private company on 5th July, with a capital of £232,500 in 300,000 Five per cent. Cumulative Preference shares of 7s. 6d. each and 300,000 Ordinary of 8s. each. It will acquire the undertaking of W. Klingenstein & Co., Ltd., tobacco and cigar manufacturers and merchants.

The first directors are: Mr. Samuel Baird, merchant; Mr. Gilbert Kay, merchant; Lord Bradbury; Mr. Reginald Earle and Mr. John MacDonald. The registered office is at 30, St. Mary Axe, E.C. 3.

Tanner Bros. (Greenfield), Ltd.

This firm has been registered as a private company with a capital of £120,000 in £1 shares, to acquire the business of Tanner Bros., Ltd., at Waterside Mills, Greenfield, Yorks, and elsewhere, and to carry on the business of manufacturers, printers and dealers in all descriptions of textile goods, etc. The directors are John E. Tanner, Gilbert Tanner and Harold A. Tanner. Solicitors: Swire & Higson, 15, Windmill Street, Manchester.

C. T. Bowring & Co. (Fish Oils), Ltd.

This is a private company formed for the purpose of entering into an agreement with C. T. Bowring & Co., Ltd., and in order to manufacture, refine, and deal in fish oils. Nominal capital £100,000 in £1 shares. The address is 20, Castle Street, Liverpool.

AMALGAMATIONS.

Merchant Shippers Fusion.

An important amalgamation of well-known Manchester merchant shipping firms is announced.

It is stated that Ellinger & Co., of Oxford Street, Manchester, has transferred the goodwill of its business, together with all trade-marks, etc., to A. W. Sudworth & Co., of York House, Major Street, Manchester. After 1st July all orders will be carried out by Sudworth & Co.

Ellinger & Co. started business in 1856, and for a long period had extensive trade connections, particularly in China. Of recent years the decline of the China trade with Lancashire has seriously affected many merchant shipping firms, and this is by no means the first important Manchester house to find it necessary to merge with other concerns.

Stainless Steel Merger.

It is announced that the stainless steel and staybrite steel interests of Thos. Firth & John Brown, Ltd., and those of English Steel Corporation, Ltd., are to be merged.

The new company to be formed, Firth-Vickers Stainless Steels, will have a capital in the region of £800,000 and the headquarters will be at the Tinsley Works, Sheffield, of Thos. Firth & John Brown.

The Chairman of the new Company, Mr. Allan J. Grant who joined the Board of John Brown & Co. in 1911, is managing director of Thos. Firth & John Brown, Ltd.

Alpha Cement Merger.

The Alpha Cement Company has acquired the whole of the share capital of the Thames Portland Cement Co., Cliffe, near Rochester, which was formed in 1913 by Broad & Co. and John Byford & Son, General Builders' Merchants. The shares were formerly held by Mansfield (Holdings), which controls Broad & Co., John Byford & Son, H. R. Mansfield & Mansfield Bros. The latter two companies manufacture drain pipes, fire bricks and sanitary ware.

INCREASES IN CAPITAL.

	£
Tunnel Portland Cement Co., Ltd.	400,000
British Tabulating Machine Co., Ltd.	200,000
John Bagnall & Sons, Ltd. (Iron foundry)	80,000
Phillips Yeast Products, Ltd.	175,000
London Tin Corporation, Ltd.	250,000
Oxford & Shipton Cement, Ltd.	200,000
Hill, Rhodes & Wilkinson, Ltd. (Sponge cleaning cloths)	101,250

CONTRACTS SECURED.

Cast Iron Pipes for Norway.

An order for the supply of cast iron pipes required for the Bergen Municipal Waterworks has been secured by The Stanton Ironworks Co., Ltd., of Nottingham. The value of this contract is approximately £1,250.

United Kingdom Coal for Egypt.

The Maris Export and Trading Co. has been awarded a contract by the Egyptian State Railways for the supply of 15,000 tons of washed and sized coal.

United Kingdom Coal for Finland.

An order for 30,250 tons of steam coal for shipment to various Finnish ports has been placed by the Finnish State Railways. Of the above quantity 10,000 tons of Welsh coal have been purchased from Powell Duffryn Steam Coal Co., Ltd., Cardiff, the balance of 20,250 tons being distributed among a number of shippers of East Coast coal.

Bank Note paper for Latvia

Thomas de la Rue & Co., Ltd., London, have received an order for the printing and engraving of new 50-lat notes for the Bank of Latvia, to the amount of 1,000,000 pieces. The value of the order is stated to be approximately £2,000.

Portals, Ltd., London, have secured an order from the Latvian Ministry of Finance for the supply of bank note paper incorporating a special watermark design, sufficient to print 4,000,000 20-lat bank notes. The cost of the paper is stated to be over £1,700.

Pumping plant for Latvia.

The Harland Engineering Co., Ltd., have secured an order to supply pumping plant required for the Riga Waterworks to the value of £11,000.

Paper for Egypt.

John Dickinson & Co., Ltd., have secured an order for the Egyptian Government for the supply of printing

paper for the Survey of Egypt. The value of the contract is stated to be over £3,500.

Chinese contract for Lancashire.

Francis Morton & Co., Garston, have been awarded a contract by the Chinese Government Purchasing Commission for the construction of a large locomotive erecting shop, erected in Canton, involving the use of 1,500 tons of steel work.

Steel for Holland.

The steel required for the execution of the several plans of bridge construction in Holland has been purchased by the Dutch Government in Great Britain.

These purchases so far total approximately 8,000 tons, and further purchases will follow.

Generating Plant for South Africa.

The Victoria Falls and Transvaal Power Company has just placed another important contract for generating plant to be installed in the new Klip River Station, South Africa, with the Metropolitan-Vickers Electrical Company of Trafford Park, Manchester. The contract covers the supply of three turbo-alternator sets each of 33,000 kw. capacity complete with condensing plant. The turbines will be of the two-cylinder impulse type.

Textile Machinery for Hungary.

A contract has been secured by Platt Bros., of Oldham, for the supply of textile machinery to Magyar Pamutipar to the value of approximately £10,000.

Shipbuilding Contracts

W. Crockatt & Sons, Ltd., Glasgow, have received an order to supply a complete outfit of their Simplex electric salinometers for the *Normandie*, now being completed in the Penhoet shipyard, France. This outfit is designed to indicate the salinity of feed water, condensate, drains, etc., at 12 separate points, the indications, however, being all given on one control board.

Peter Brotherhood, Ltd., Peterborough, have secured an order for the supply of two 150 b.h.p. Brotherhood-Ricardo engines for Cantieri Riunti dell' Adriatico.

Diesel Engines.

Millen Bros., of Paisley, have received instructions to construct four 64 ft. shallow-draught passenger boats having tunnel sterns. Each boat will be propelled by a four-cylinder 88 h.p. Kelvin-Diesel engine and the vessels are destined for service at Bangkok.

Railway Contract for Warsaw.

British Insulated Cables, Ltd., have received an order for the supply and erection of overhead electrical equipment for the suburban railway lines in the neighbourhood of Warsaw. The value of the order is a little over £200,000.

Egyptian Government Contracts.

MATERIAL AND NAME OF SUCCESSFUL TENDERER.

	£
<i>Teak Wood.</i>	
Wallace Bros. and Co., Ltd., London . . .	2,000
<i>Steel Crossings.</i>	
Titan Trackwork Co., Ltd., Sheffield . . .	2,900
<i>Steel Joists.</i>	
H. J. Skelton and Co., Ltd., London . . .	1,200
<i>Cotton dressings, hospital supplies, etc.</i>	
£12,000 divided among five United Kingdom firms.	

Orders from South Africa.

The following orders for United Kingdom goods have been placed by the Johannesburg City Council:—

	£
<i>General Electric Co., Ltd.</i>	
Stationary batteries and equipment, electric light fittings, street lighting poles, radial wave fittings	3,250
<i>Hubert Davies and Co., Ltd.</i>	
Meters	2,850
<i>Dawson and Dobson (Ferguson Pailin, Ltd.)</i>	
Switchgear cubicles	1,800
<i>Baldwins (South Africa), Ltd.</i>	
Steel gas piping	2,000
<i>Stewarts and Lloyds of South Africa, Ltd.</i>	
Gas engine generating sets	5,350

Sugar Refinery Machinery for West Indies.

Mullees, Watson & Co., Ltd., of Glasgow, have secured a £70,000 contract for sugar refinery machinery to be supplied to the Caymanas Estate in Jamaica.

THE UNITED KINGDOM IRON AND STEEL INDUSTRY.

Operations in the iron and steel industry in the United Kingdom are being well maintained. There was a slight increase of one per cent. in the average daily rate of pig iron output during June, the total production amounting to 515,000 tons compared with 528,000 tons in May and 346,000 tons in June last year. The fall in the total output was more than accounted for by the shorter working month. While there has recently been some falling off in new business in pig iron it is reported that, as current production is passing into consumption, stocks are not showing any increase. In some cases a number of long-term contracts have recently been renewed, but other consumers are, for the time being, confining their purchases to immediate requirements and this business is in the main made up of small tonnages.

At the present time the steel industry in the United Kingdom is operating at a level approximating to 75 per cent. of capacity, which is an appreciably higher level than in any of the other major steel producing countries for which reliable statistics are available. In June the total output of steel ingots and castings was 758,000 tons against 780,000 tons in the preceding month and 569,000 tons in June last year. The demand for finished steel products is somewhat irregular, and business is on the whole more active in the lighter branches than in the heavy sections of the industry. While domestic demand continues to dominate the market there has recently been a seasonal decline, but enquiries on export account have improved and a certain number of orders have been placed by overseas buyers. The improvement is attributable to a large extent to a more active demand from Empire countries in particular.

As has already been indicated the quieter tendencies which have developed in the iron and steel market are

only to be expected at this period of the year. While there have been indications of seasonal declines, however, the position in the major producing areas of the country is fundamentally sound and the future is viewed with reasoned optimism. On the North-East Coast the tonnage on the order books at the end of June was approximately the same as at the end of the previous month. The pig iron market position shows little change and stocks are unusually small. The steel industry continues to be well employed and domestic demand is being maintained. In South Wales quiet conditions rule in the tinplate market: consumers of semi-finished material are in many cases restricting their purchases to immediate requirements, but the demand for heavy finished steel products is being well maintained. In the Sheffield district business in billets, sheet and strip is unusually active for this period of the year, and an expansion in demand is generally anticipated in the Autumn. Makers of special steels of all kinds are well occupied with orders.

Notwithstanding the numerous barriers to international trade which are still in existence there has recently been an appreciable and welcome expansion in the export trade. In June the total exports of iron and steel products from the United Kingdom amounted to 204,100 tons, compared with 190,600 tons in May and 153,800 tons in June 1933. For the first six months of 1934 iron and steel exports amounted to 1,037,000 tons, compared with 905,000 tons in the corresponding period of 1933, an increase of 15 per cent. The increases in exports were relatively most pronounced in the case of Empire countries, particularly South Africa, Canada, New Zealand and the Irish Free State. As regards exports to non-Empire countries the increases were greatest in the case of Russia, the Netherlands, Denmark and Norway. Exports to China, Japan and Brazil showed substantial declines.

Although there has been an appreciable fall in the imports of iron and steel products into the United Kingdom they are still considerably higher than twelve months ago. In June iron and steel imports were 98,000 tons against 122,000 tons in May and 69,000 tons in June last year. For the first six months of the current year iron and steel imports totalled 710,000 tons, compared with 469,000 tons in the corresponding period of 1933, an increase of approximately 50 per cent.

INTERNATIONAL TINPLATE AGREEMENT, 1934.

It is announced that an agreement between the large tinplate producing countries was recently concluded in Paris and was ratified by the United Kingdom interests concerned at Swansea on the 17th July. The countries participating are the United Kingdom, United States of America, Germany, France and Italy. The agreement provides for the raising of the world level of selling prices of tinplates, and has two main features:—

- (1) Establishment of quotas of export trade.
- (2) The fixing of international c.i.f. prices.

It is understood that there is no reservation of export markets.

MACHINE TOOLS.

Combined Twist Drill Fluting and Clearance Milling Machine.

Messrs. Herbert Hunt & Sons, Elsinore Road, Old Trafford, Manchester, have introduced a machine for grooving and clearance milling twist drills from $\frac{1}{2}$ inch to $1\frac{1}{4}$ inches diameter; it will deal with flutes up to 12 inches long. The machine is a modification of the single-cutter-type drill-fluting machine, an additional cutter spindle being provided for carrying a second cutter, which mills the clearance at the same time that the flute is being milled. The machine is built on robust lines, so that full advantage may be taken of modern high-speed steel milling cutters. The machine is capable of cutting the flutes and milling the clearance of $1\frac{1}{4}$ -inch diameter 18 per cent. tungsten high-speed steel drill blanks at the rate of 3 inches per minute.

The workhead which carries the drill, feeds forward automatically during the milling operations, and automatically reverses and returns to the starting position. A drop action is incorporated to the swing arm so that the work falls clear of the fluting cutter, and the cross slide which carries the clearance cutter also moves clear of the work, before the return motion to the head is actually engaged. The clearance milling head can be arranged for an angular cutter or for a parallel cutter.

A cam is arranged at the lower part of the swing arm, and this gradually lowers the work during the flut-

ing, making a tapered flute which thickens up the web towards the shank end. The machine is also made so that the swivel arm moves a few degrees and crosses the work slightly on the cutter, this having the effect of retaining an equal width of flute for the entire length. Change gears are provided for varying the pitch of the spiral, and the angle is varied by adjustment to the swing arm. Part-parallel and part-taper flutes can be milled, and slip gears are provided for varying the traverse. The fluting cutter arbor is supported at the outer end from a rigid overarm, which is also braced to the knee bracket. A large-diameter cone bearing provides the necessary adjustment for wear. The machine is arranged for a direct drive from the line shaft to fast and loose pulleys, but a separate motor can be embodied if preferred. A pump and tank are provided in the base of the machine.

SHIPBUILDING.

Lloyd's Register of Shipbuilding Returns for quarter ended 30th June, 1934, shows that in Great Britain and Ireland there is an increase of 105,702 tons in the merchant tonnage under construction as compared with that in hand at the end of the previous quarter, and that the present total is 299,640 tons greater than the tonnage under construction at the end of June, 1933. The figures for the three quarters referred to are:—

<i>30th June, 1934.</i>		<i>31st March, 1934.</i>		<i>30th June, 1933.</i>	
<i>Number of vessels.</i>	<i>Gross Tonnage.</i>	<i>No.</i>	<i>Gross Tonnage.</i>	<i>No.</i>	<i>Gross Tonnage.</i>
131	587,142	107	481,440	84	287,502

The total for the end of June, 1934, includes 15 vessels (all steamers) of 59,318 tons on which work has been suspended.

Nationality of Vessels under Construction.

<i>Country for which intended.</i>	<i>No.</i>	<i>Gross Tonnage.</i>	<i>Country for which intended.</i>	<i>No.</i>	<i>Gross Tonnage.</i>
Great Britain and Ireland	103	497,064	Mexico	2	3,456
British Dominions	8	25,312	Country not stated, or For Sale	13	47,380
China	4	13,800			
France	1	130	TOTAL	131	587,142

The tonnage now under construction abroad, *viz.*, 629,198 tons, is about 31,000 tons in excess of the work which was in hand abroad at the end of March, 1934, and is the highest quarterly total recorded since September, 1932.

Of the total tonnage under construction throughout the world (excluding Russia, for which the figures are not available), *viz.*, 1,216,340 tons, 48·3 per cent. is being built in Great Britain and Ireland and 51·7 per cent. abroad. The world-total shows an increase of 137,000 tons over the figures at the end of March quarter, and is the highest recorded since March, 1932. The leading countries abroad are:—Japan, 137,280 tons; France, 104,500 tons; Germany, 91,145 tons; Denmark, 66,650 tons; Holland, 54,765 tons; Sweden, 49,025 tons; and Italy, 47,670 tons.

Tonnage commenced and launched.—146,653 tons were commenced in Great Britain and Ireland during the three months—a decrease of 56,359 tons as compared with the corresponding total for the March quarter.

During the quarter ended June, 1934, 35,954 tons were launched in Great Britain and Ireland, an increase of 1,115 tons as compared with the previous quarter. Similar figures for the rest of the world are—125,912 tons commenced, and 113,438 tons launched, showing a decrease as compared with the previous quarter of 132,136 tons in the tonnage commenced, and an increase of 62,175 in the tonnage launched.

AUTOMOBILE AND ALLIED TRADES.

“THE MOTOR INDUSTRY OF THE UNITED KINGDOM.”

The annual summary of the Industry for 1933 recently issued by the Society of Motor Manufacturers and Traders might well be described as the record of an epic achievement, for it graphically illustrates the expansion of the industry in spite of many hindrances, and demonstrates how it has become the most important factor in national life.

Considerably more than 1,000,000 persons are employed in the manufacture, maintenance and operation of motor vehicles in the United Kingdom, while the

employment of many others is dependent on the consequent distribution of ancillary work.

The total gross receipts from the taxation of cars, commercial vehicles, hackney vehicles and tractors in the United Kingdom have increased from £20,965,623 in 1927 to £26,917,239 in 1933. In 1933 there were 1,738,972 motor vehicles in use in the United Kingdom as compared with 1,209,928 in 1927, and 811,947 in 1924.

Production of motor vehicles in the United Kingdom has increased from 146,600 in 1924 to 286,283 in 1933. Last year the production of private cars and taxis was in itself considerably in excess of the total production of all vehicles in 1924.

Although the net imports of motor vehicles into the United Kingdom showed an increase last year as compared with 1932, the total of 4,019 vehicles to a value of £724,828 is less by over 19,000 vehicles and over £3,350,000 than the figures of such imports in 1924.

The figures of United Kingdom exports indicate in a striking manner the advance which the industry has made in recent years, for in 1924 there were exported only 15,659 vehicles (value £4,869,459), which had increased last year to 51,692 (value £6,740,584).

Into these bare statistics may be read a record of the steady headway which the industry has made of recent years, over a considerable period of which the world had been experiencing a depression in trade almost unparalleled in history, and those responsible for the "Motor Industry of the United Kingdom" face the future with confidence and the determination to place the United Kingdom in a position of still greater prominence in the motor markets of the World.

TEXTILES.

COTTON.

The trend of American cotton prices continues upward and there seems to be little likelihood of any great reaction. The official acreage return estimated the area under cultivation at a lower figure than had been anticipated and, at the same time, reports from the cotton States speak of either too much rain or too little, so that a crop even smaller than that provided for by the Bank-

head Bill is not impossible. In any case, with so many bullish factors apparent on the supply side, an increase in demand is almost certain to provoke further rise in the price of the raw material.

Spinners and manufacturers have been obliged to raise their quotations in sympathy with raw cotton quotations, but buyers have been slow to respond, and their offers have, as a rule, been on a lower basis than of late.

Enquiry from overseas markets is active, but the resulting business is only in small amounts for immediate needs.

The improved exchange position with China had little immediate effect on sales of cloth, but useful orders for poplins and fancies were reported later. The Straits Settlements continue active, though the quantities handled are not large. The South American markets grew quiet during the first fortnight of June, but their interest in quotations for prints and various specialities re-awakened later. The Dominions have continued to buy somewhat irregularly, though sales of heavy materials have been reported for South Africa. Continental demand has not been very satisfactory.

The home trade has not placed many substantial orders, but a revival of activity is thought to be not far off.

The exports of cotton yarns and piecegoods in June compare favourably with those for June of last year, but show a slight falling-off as compared with May.

	June, 1934.	May, 1934.	June, 1933.
Yarns.	1,000 lbs.	1,000 lbs.	1,000 lbs.
Grey	9,588	10,100	9,495
Bleached and dyed	1,057	1,172	1,086
	1,000	1,000	1,000
Piecegoods.	sq. yds.	sq. yds.	sq. yds.
Grey	25,622	25,755	22,791
Bleached	43,680	46,232	45,341
Printed	33,175	29,857	30,155
Piece-dyed	40,423	42,490	37,050
Yarn-dyed	5,878	6,311	6,219
Total piecegoods	148,778	150,645	141,556

LINEN.

The yarn market continues quiet with a tendency towards higher prices. Exports of flax and hemp yarns

for the month of June, 1934, were valued at £71,866 as compared with £59,685 and £48,388 in June, 1933 and 1932, respectively.

Exports of linen generally during June showed a slight recession from the high figures of recent months, but the total for the six months of 1934 reveals a steady improvement in the export trade.

In piecegoods the total exports during the half-year amounted to £2,109,286 as compared with £1,785,442 and £1,700,029 for the first half of 1933 and 1932, respectively.

The principal markets for piecegoods during the half-year were the United States of America (£915,594 as compared with £788,689 in the first six months of 1933), Australia (£186,653 compared with £138,452), Canada (£133,841 compared with £106,759) and China (£127,964 compared with £82,174). The Union of South Africa took first place for proportional increase, the exports to that country, valued at £61,465 for the six months, being almost double those for the corresponding period of last year, while Brazil was the only market to show a decrease as compared with last year.

Damask table linen recovered a little as compared with last year's period, though the export was still much below the average of several years ago. Comparable figures for the first half of each year are:—1934, £292,659; 1933, £254,568; 1932, £348,065; and 1931, £324,647.

Handkerchiefs continued to be the poor feature of linen exports and for the half-year the value exported was only £108,692 as compared with £127,510 in 1933 and £135,805 in 1931.

Imports of linen manufactures into the United Kingdom for the first six months each of 1934, 1933 and 1932 were £127,070, £133,276 and £180,603, and exports from the United Kingdom for the same periods were respectively £3,078,922, £2,681,832 and £2,766,279.

The total quantities of piecegoods exported during the six months ended 30th June, 1934, 1933 and 1932, were 44,522,000, 39,057,000 and 37,494,000 square yards.

WOOL.

The German embargo on the import of wool, Italian restrictions of imports, and the strike of woollen workers

at Verviers still unsettled, kept many buyers away from the last London wool sale, with the result that a decline of 20 per cent. to 25 per cent. in wool values took place compared with prices ruling at the close of the May auction.

The exports of woollen and worsted tissues to some of the countries with which the United Kingdom has recently made trade agreements are interesting. Comparing the first six months of this year with the January, June period of 1933, 300,000 square yards more have been exported to the Argentine; 214,000 square yards more to Sweden; 105,000 square yards more to Norway, and 368,000 square yards more to Denmark. The exports to Canada following the Ottawa trade agreement are also significant; over 3½ million square yards more woollens and worsteds were shipped to Canada up to the end of June this year than during the first six months of 1933.

Other Dominion markets which are considerably up on last year are Irish Free State, South Africa, Australia and New Zealand. The United States of America have taken over half a million more square yards of woollens and worsted tissues this year than during the corresponding period of 1933. A significant feature of the increase is that the quantity of woollens is much greater than worsteds with which one usually associates the American market. The increases already mentioned with other smaller increases during the first six months of this year have given an aggregate export of woollens and worsteds over 6½ million square yards more than during the similar period of 1933. In addition, there was an increase of 1,193,000 square yards in flannels and delaines. The following table shows the exports to date of the principal wool textile semi-manufactures and tissues; the figures for tissues being the highest for four years:—

	<i>Jan.-June, 1934.</i>	<i>Jan.-June, 1933.</i>
Tops. Centsals of 100 lbs.	226,940 <i>lbs.</i>	220,240 <i>lbs.</i>
Woollen and worsted yarns	21,803,700 <i>sq. yds.</i>	18,192,100 <i>sq. yds.</i>
Woollen tissues	32,607,000	27,880,000
Worsted tissues	17,075,000	15,034,000
TOTAL	49,682,000	42,914,000

PAPER.

Conditions in the paper industry have undergone little or no change during the past month. Home consumption is still taking the bulk of the paper produced, but export trade is increasing slightly month by month. The value of the exports from the United Kingdom of paper, cardboard, etc., exported for the first six months of this year was £3,014,771. The figures for the corresponding period of 1933 and 1932 were £2,880,362 and £3,319,350, respectively.

The following table gives details for the various sections:—

Section	Value of Exports.		Increase.	Decrease.	Inc. or Der per cent. over 1933.	
	1934.	1933.				
	£	£	£	£	%	%
Newsprint in rolls .	945,404	494,374	—	88,970	—	20 4
Other printing paper	695,281	618,523	74,758	—	12 0	—
Writing in large sheets .	232,841	204,487	28,354	—	13 8	—
Wrapping .	217,723	166,332	51,391	—	30 8	—
Cardboard and mill-board .	122,420	94,003	28,417	—	30 0	—
Stationery .	408,025	433,281	—	30,256	—	6 9
All other sorts .	998,077	929,362	68,715	—	7 0	—
TOTAL	£3,014,771	2,880,362	134,409	—	4 6	—

POTTERY AND GLASSWARE.

There is no change of any importance to record in connection with these trades. A steadily improving demand is evident, mainly for the home trade, and there is also a better tendency in the requirements for certain export markets.

Following are details for the exports of pottery for the first six months of 1934, together with comparative figures for the corresponding period of 1933:—

Class.	Value of Exports.		Increase.	Increase per cent. over 1933.
	1934. £	1933. £		
Tiles (all classes) . .	100,151	94,095	6,056	6 4
Sanitaryware . . .	309,925	285,438	24,487	8 6
Chinaware . . .	110,581	91,591	18,990	20 7
Electrical porcelain .	50,543	25,827	24,716	95 7
Earthenware of all other descriptions . .	744,146	670,845	73,301	10 9
Refractory goods not otherwise specified .	131,969	114,929	17,040	15 0
All other descriptions .	32,298	37,086	4,788	12 9
			(Dec.)	(Dec.)
TOTAL	1,479,613	1,319,811	159,802	12 1

Following are details of the exports of glass and glassware for the first six months of 1934, together with comparative figures for the corresponding period of 1933 —

<i>Class.</i>	<i>Value of Exports.</i> <i>1934.</i> £	<i>1933.</i> £	<i>Increase.</i> £	<i>Increase</i> <i>per cent.</i> <i>over 1933.</i>
Scientific glassware .	45,572	34,025	11,547	34.0
Domestic and fancy glassware . . .	83,850	65,776	18,074	27.5
Plate and sheet glass .	382,075	324,339	57,736	17.8
Glass bottles and jars .	114,853	136,201	21,848	16.0
			(Dec.)	(Dec.)
All other kinds of glass- ware	49,195	42,714	6,481	15.2
TOTAL .	675,045	603,055	71,990	11.9

AVIATION.

UNITED KINGDOM AIRCRAFT FOR THE WORLD.

Success of Third Trade Flying Display.

Representatives of military and civilian aviation in forty countries were included among the eighteen hundred guests of the Society of British Aircraft Constructors at the Society's Third Flying Display and Exhibition, held at Hendon aerodrome on July 2. On that day, forty-three aeroplanes—examples of thirty-seven distinct types of aircraft—were paraded for inspection; thirty-two of them were put through demonstration flights and many were employed to give passenger flights. An immense shed alongside the entrance to the aerodrome housed the exhibits of forty-seven firms—makers of aero engines, materials, instruments, and accessory equipment.

In the days immediately following the Display, many of the Society's guests from overseas visited United Kingdom aircraft and aero engine factories. Thus the demonstration of the quality of British aircraft matériel which was begun at Hendon on the Monday was continued for the rest of the week in the factories and on the aerodromes of individual manufacturers. Orders of some importance may result.

The 1934 Display approached more nearly to perfection than its two predecessors. Those responsible for the organisation had learned much from experience of the First and Second Displays, and this year every cog in the not inconsiderable machinery involved in running an event of such magnitude worked smoothly. Not least of the problems before the organisers was the arrangement of the official luncheon, at which eleven hundred guests were seated.

No definite announcement can yet be made about plans for next year, but the Society's "dynamic" Displays, as opposed to the usual kind of "static" Exhibition in a large hall, have proved so successful that a Fourth Display will probably be held in 1935. The present intention is to announce plans early next year. All potential buyers of any kind of aircraft matériel are asked to bear in mind the likelihood that the next Display will take place towards the middle of 1935; the Display is entirely private, open only to people who are invited by the Society, but invitations would be sent with pleasure to potential buyers and others seriously interested in aviation who might be able to visit England at the time of the Display.

The demonstration flying in the morning—two hours of perfect evolutions by some of the world's best pilots—was watched with frank admiration. The test pilots of the manufacturing firms, some of them men well on in middle age who fought all through the War, showed off the newer products of the industry to magnificent advantage. Inevitably, the new single-seater fighters, capable of attaining in the dive speeds in excess of 400 miles an hour, and the new day bombers proved most spectacular, but the expert eye found the smooth and masterly handling of the bigger machines equally gratifying. A large monoplane bomber, for example, with wings measuring more than 100 feet from tip to tip, was flown in vertically banked turns of small radius almost as easily as if the pilot were at the controls of a scout.

The forty-three machines comprised sixteen craft designed for commercial or private flying, eight training aeroplanes and nineteen military aircraft. One military machine and one of the commercial craft were brought in especially to illustrate installation of two models of the new "H"-shaped engines—a 2-cylinder 700 h.p. motor in the military craft and a 16-cylinder unit in the commercial plane. Of the military machines, five were

single-seater fighters, six were modern examples of the general-purpose aircraft designed primarily for use in the Middle East and India, two were single-engined day bombers, two night or heavy bombers, two amphibians, and one a heavy transport machine. The nineteenth military craft on view was a twin-engined flying boat of the latest type to be adopted by the Royal Air Force, which was flown from Felixstowe and gave a fine demonstration of flying over the aerodrome during the afternoon.

Civil machines ranged in size from one of the new four-engined biplanes built for Imperial Airways, and designed to meet requirements of the Singapore-Brisbane-New South Wales sections of the England-Australia airway, to single-engined light craft. Significant of modern trend in civilian aircraft design was the preponderance of monoplanes, which outnumbered biplanes by twelve to three; the sixteenth civil machine was the autogiro, now manufactured by one of the leading British companies. Evidently, the advantages of monoplane construction are becoming more and more apparent in many forms of craft and especially perhaps when the designers wish to arrange for undercarriage struts and landing wheels to be withdrawn within the wings or the engine nacelles when the machine is in flight. Nevertheless, the struggle between the two types is by no means settled; the presence on the aerodrome of the beautifully streamlined and very fast four-engined biplane built for the Australia run was sufficient proof of that.

For military use the biplane remains pre-eminent. Only one of the military aircraft on view—a heavy bomber—conformed to the monoplane formula. The remainder were biplanes; their speed and rapidity of manoeuvre, the lightness of the wing structure and their compactness were important advantages of biplane construction that were readily apparent to the onlookers.

The number of firms represented in the "static" Exhibition—47—was eight more than in 1933 and more than double the number of participants at the First Display in 1932. The six chief engine manufacturing firms were all represented. Five showed a total of thirteen air-cooled motors, ranging in power from 155 to 770 h. p. One famous firm showed one liquid-cooled engine, but that was a recent model of the best liquid-cooled engine in the world. The air-cooled units com-

prised two double-row 14-cylinder units, three single-row 9-cylinder motors, one single-row 7-cylinder engine, two 6-cylinder-in-line engines, three 4-cylinder-in-line engines, and two "H"-shaped motors, one with 24 and the other with 16 cylinders. The liquid-cooled motor has twelve cylinders arranged "V"-fashion in two banks of six; its cooling system is composite, employing steam condensers and a small water radiator.

Every kind of navigational and recording instrument, material, and accessory equipment was arranged for inspection on other stands. Particular notice was given to the new variable pitch airscrew, to the example of a novel kind of single-spar wing in which the spar not only carries all main loads but is also used to carry fuel, and to the "third axis" control, on view for the first time at the Display. This last device, when fitted to work in conjunction with automatic rudder and elevator controls, makes an aeroplane completely automatic in flight. Every evolution in three dimensions can be performed by these three members of the robot pilot mechanism. Controls of this kind are installed in new heavy bombing aeroplanes and flying boats built for the Royal Air Force.

COMMERCIAL AIRCRAFT.

Comparative statistics of the work of United Kingdom, French, German and other European aircraft on regular service are given in an issue of the United Kingdom Air Ministry's *Résumé* of commercial information. They show that United Kingdom transport 'planes work harder and carry bigger pay-loads than any other aircraft in Europe. Last year, for example, the average scheduled weekly mileage per aeroplane was, for the United Kingdom machines, 2,807. Next came aeroplanes flown by one of the German air transport companies, with 2,583 scheduled weekly miles. A Finnish company averaged 2,451 miles, and a Swedish line 2,217 miles. A Swiss company averaged 2,028 miles. The best of the Italian companies recorded 2,111 miles, and the French combine 975 miles. Netherlands transport machines averaged 1,559 miles weekly.

The United Kingdom 'planes are *easily first in available pay-load* per machine, reflecting the policy which has produced the fleet, relatively small in numbers, of the very large aircraft that at present assure the United Kingdom services. The United Kingdom Air Liner shows

an average of 4,942 pounds of available pay-load; the next on the list is the Netherlands company's machines, with 2,546 pounds. Numbers of civilian aircraft on the register of European states at the end of 1933 are also recorded in the *Résumé*. Here the United Kingdom stands third, with 1,035 machines, against 1,654 in France and 1,072 in Germany.

THE SCOTTISH WOOLLEN INDUSTRY.

The Scottish Woollen Industry is a comparatively small affair as National concerns are now counted, but one of the lessons we learned from the war was that the value of an industry to a Nation does not depend entirely, or even mainly, on its size, but like the keystone of an arch, on its position in the general structure of which it forms a part.

In the United Kingdom Textile Industry the Scottish Section occupies quite an important position. It is composed of a number of small firms producing highly specialised goods, the various firms that make up the Industry having for the most part been in existence from the time when it was in the purely craft stage of isolated and individual hand-loom weavers working in their own homes.

The Industry has to a remarkable extent avoided large scale organisation. Depending as it does on the demand for high-class goods of individual style and pattern, it was realised that it would be fatal to enter the field of mass-produced cloths, and the industry has been content to go on producing its own specialities for a market, which though subject to certain fluctuations due to changes of fashion and prosperity, has always remained sufficiently steady to absorb the somewhat restricted output of the various Scottish mills. There being no really large scale mills in the Industry and the product being a relatively high-priced article it follows that it is often possible for a quite small country mill to compete successfully in price with a much larger town mill. It is because of this that the Scottish Woollen Industry can continue to prosper, even though divided into many comparatively small firms scattered throughout the country. What is more important still is that there is little danger of such an industry failing, so long as it can perform the two special functions of providing the experimenting ground for the most advanced sections of the fashion and

novelty trade for both men and women, and of producing some of the finest and most beautiful materials of super-fine quality for every purpose to which woollen goods can be applied.

The amount of inherited and traditional skill and knowledge in the Scottish Woollen Industry is remarkable. The movement of labour in Scottish mills also is almost negligible, several generations of the same family often working in one mill, whilst quite often the masters have been brought up with their own men. As a result of this, labour disputes, if not unknown, are very rare indeed, as amongst men who have worked side by side differences are easily settled before they have a chance of becoming grievances, whilst the continued co-operation, combined with personal contact between employer and employee, does much to enhance the individual characteristics of the products of the different mills.

It is remarkable how the small differences in manipulation as between one mill and another often produce marked differences in the materials turned out. Slight differences in blends of wool, or in machinery, or in the handling, become considerable in their cumulative effect. The resulting cloths are often extraordinarily difficult to reproduce in other plants. These differences are not sufficiently important in themselves to constitute trade secrets and, indeed, are often so slight that they could not be transmitted excepting by long personal practice in the manipulation of the material. Nevertheless, they constitute a sort of unregistered copyright for the cloths of most of the mills in the industry, and to anyone well acquainted with the industry it is possible to identify the maker of the cloth on sight.

Industries, however, must keep pace with fashion and fashion does not always move in circles. In fact history very rarely repeats itself completely and at present there is far less individuality in cloth for men's wear than ever before. Merchants, Tailors and Clothiers seem to be labouring, and not unsuccessfully, to enclose the industry in a strait waistcoat of uniformity, and in demanding for every purpose the bright clear surface which properly belongs to English worsteds, they are depriving men of some of the best types of cloth for country wear, as well as many of the most useful and economical types for town wear—the best for endurance, the best for comfort in resistance to heat or cold, and the

best for the fullest use of protective colour for the sportsman. To obtain the best clothing effect out of wool, its great and distinguishing feature of felting must be utilised. This characteristic of felting or milling, that is for the fibres to knit and grip one another, thus making the fabric one cohering whole, rather than a collection of threads, is the one which chiefly distinguishes wool from cotton, linen, silk or rayon, and it is the manipulation of the milling process that accounts for the individuality of the products of the Scottish mills and which has been one of the chief causes of its success.

Another item which has counted for a great deal in the evolution of the Scottish Woollen Industry as the pioneer of the Fancy as distinguished from the Plain trade, is the use of colour, which has all along been a characteristic of the Scottish Industry. The appreciation of colour and its application to art and industry depends primarily on Nature for its inspiration. Scotland is itself one of the most highly coloured and varied lands in Europe. Its changing seasons, its varied soil and surface produce landscape changes greater than are to be found in a like compass in almost any other part of the world. It is not strange, therefore, that Scottish artists and craftsmen should have developed both a love and a sense of colour, and that this colour sense should appear not only amongst Scottish poets and painters, but amongst Scottish weavers also. The Scottish woollen mills are distributed over the whole land and are not segregated in dense industrial areas, and the designers are therefore in close contact with the open country, which gives them the stimulus of daily change, whilst the ever-changing variety of Nature leads inevitably to the production of new and unimaginable colour schemes. It would almost seem that they possess a natural advantage over most other peoples in the resources of their own country, an advantage that can never be completely overcome by technical training or organisation.

Nearly all the Scottish mills are self-contained, that is to say, they buy raw wool and turn out finished cloth. The woollen spinning process used in all Scottish mills allows of an almost infinite variety of blending and manipulation of raw material, whereas the worsted spinning process demands a fairly narrow choice of wools of a certain character of length and strength. This at once gives the woollen spinner a far wider choice of raw

material and makes it possible for the woollen manufacturer to produce a greater variety of textures than can be produced by the worsted maker. Of late years, too, technical knowledge has progressed wonderfully, and now the Scottish Woollen Industry is turning out goods of an extraordinary variety for an ever-widening range of uses, from very fine cloths down to 4 or 5 ounces to the yard, 56" wide for ladies' wear, up to heavy coatings suitable for use in the Polar Regions. Every class of wool is used, gathered from every part of the world—Chinese cashmeres and camel wools, vicunas, alpacas and llamas from South America, mohair from the goats of Asia Minor, the Cape and Tasmania—materials fit to clothe the whole world and to suit almost every taste.

Small wonder is it then that in spite of almost universal trade depression, the Scottish Woollen Industry is still flourishing, and there is every indication that it will continue to hold its own so long as high-class woollens of distinct individuality are appreciated by the buying public.

CATALOGUE LIBRARY.

The undermentioned catalogues relating to United Kingdom manufacturers have recently been received and may be consulted by *bonâ fide* firms or individuals at the Office of His Majesty's Senior Trade Commissioner in India, Fairlie House, Fairlie Place, Calcutta:—

<i>Names and Addresses.</i>	<i>Description.</i>
Samuel Fox & Co., Ltd., Stockbridge Works, Sheffield.	"Silver Fox" Stainless Steels.
Roberts Black & Co., Ltd., Bridge Street, Manchester.	Robbلاك Universal Tool-Room Vice.
Rowntree & Co., Ltd., York.	Cocoa, Chocolates and Confectionery.
* Chambon, Ltd., Riverside Works, Standish Road, Hammersmith, London, W. 6.	Printing Machinery.
* Everite Pencil Co., Ltd., 7, Broadway, London, E.C. 4.	Pencils.

* Catalogues marked with an asterisk have also been received in the office of His Majesty's Trade Commissioner, 3, Wittet Road, Ballard Estate, Bombay, where they may also be consulted by *bonâ fide* firms or individuals.

In addition, His Majesty's Trade Commissioner, Bombay, has recently received the undermentioned catalogues:—

<i>Names and Addresses.</i>	<i>Description.</i>
Babcock & Wilcox, Ltd., Babcock House, Farringdon Street, London, E.C. 4.	Boilers.
F. W. Woodroff & Co., Ltd., 77 and 78, Turnmill Street. London, E.C. 1.	Rebuilt Printing Machinery.

TRADE ENQUIRIES.

The names of the United Kingdom firms referred to in the enquiries mentioned below will be furnished to reputable firms on application to His Majesty's Senior Trade Commissioner, Post Box No. 683, Fairlie House, Fairlie Place, Calcutta.

No. 733-34.

A United Kingdom firm, who are the manufacturers of a patented automatic four wheel Trailer Brake, are desirous of appointing an agent in this market.

No. 779-34.

A United Kingdom firm, manufacturing all non-ferrous metal alloys in ingots, sheets, tubes, castings and forgings, but who do not make or work pure copper or aluminium, desire to appoint agents in this market.

No. 813-34.

A United Kingdom firm, manufacturing sheet metal working machinery, including tin box machinery, desire to appoint agents in India for the sale of their machines and tools for sheet metal working.

No. 816-34.

A United Kingdom firm, manufacturing bedsteads and hearth furniture, desire to appoint agents in this market.

H. M. TRADE COMMISSIONERS IN INDIA.

Calcutta—

Sir Thomas M. Ainscough, C.B.E.,

*His Majesty's Senior Trade Commissioner in
India and Ceylon.*

Mr. R. B. Willmot,

His Majesty's Trade Commissioner at Calcutta.

Post Box No. 683, Fairlie House, Fairlie Place.

Telegraphic Address.—"Tradcom, Calcutta."

Telephone No.—"Calcutta 1042."

Bombay—

Mr. W. D. M. Clarke,

His Majesty's Trade Commissioner at Bombay.

Post Box No. 815, 3, Wittet Road, Ballard
Estate.

Telegraphic Address.—"Tradcom, Bombay."

Telephone No.—"Bombay 23095."

Ceylon—

Imperial Trade Correspondent,

The Principal Collector of Customs, Colombo.

With Compliments.

SEPTEMBER



1934

The **Commercial Bulletin**

*A Monthly Review of Official and other
announcements relating particularly
to British Export Trade.*

Issued by

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IN INDIA AND CEYLON.**

**FAIRLIE HOUSE,
FAIRLIE PLACE,
CALCUTTA.**

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GENERAL.

The steady improvement in the overseas trade of the United Kingdom continued during July.

Imports totalled £58,026,218, an increase of £4,311,400 on the same month last year and a decrease of over £3,000,000 compared with June this year. Exports amounted to £33,229,621, which is £3,282,270 more than in July last year, and over £1,000,000 compared with June.

Re-exports totalled £4,128,719, or £186,893 more than in June. The principal item in imports was wood and timber, which at £5,291,535 represents an increase of £1,878,610 over last year. There were increases of nearly £500,000 in the food, drink and tobacco category, £838,799 in rubber, and £415,773 in iron and steel manufactures, but raw cotton and cotton waste was down by over £1,000,000.

In United Kingdom exports also, iron and steel manufactures were up by £713,061, and machinery increased by over £500,000. While the United Kingdom imported less apparel by £27,288, exports under this heading during July went up by £69,262 to reach a total of £860,874.

On the whole the July overseas trade figures may be said to be satisfactory and the month's adverse balance at £20,667,878 was the smallest for a year. The increased employment figures up to the end of June are reflected, save for the badly hit textile trades, in increased exports; and there is clearly greater activity so far this year in the raw materials of industry, both in imports and re-exports.

The recent Ministry of Labour figures reveal that there were 2,361 fewer unemployed men on 23rd July than on 25th June.

In most of the principal industries there were only slight changes in the general level of employment during July. In engineering, ship-building and ship-repairing, electrical apparatus manufacture and shipping, the improvements shown in previous months continued, and there was a substantial increase between 25th June and 23rd July in the numbers at work in the coal mining

industry It is estimated that on 23rd July there were approximately 10,136,000 insured persons aged 16 to 64, in employment in the United Kingdom, which is 394,000 more than a year before

A DEVICE TO AVOID GATES

Interest may attach to a patent device to avoid gates which is being supplied in the United Kingdom and in the various Dominions and Colonies and for which at the present moment the manufacturers have in hand in order from a City Corporation for seven sets of special tracks designed to allow of the passage of motor lorries up to twelve tons total loaded weight

These tracks are to be installed at points on the roadway between railway sidings and the Corporation Waterworks The lorries carry granite cement etc from the sidings to the works and encounter a number of gateways on the road which if left open permit the straying of farm stock

Mechanical appliances for automatically opening and closing gates can be unsatisfactory under stormy conditions when high winds may prevent satisfactory operation A similar difficulty can also be caused by accumulation of snow etc whereas the patent device to which reference was made is ideally suited to such conditions and permits of a quick and easy passage of motor vehicles without stopping, getting out or handling any device of any kind whilst at the same time preventing the straying of horses, cattle, sheep or pigs, etc

The following is a brief description of the device used

A gap 8 ft wide is made in the fence or wall close to the gate and a pit is dug on the most convenient side of the gap 6 ft wide and 4 ft deep the sides being lined with stakes or bricks to keep the soil from falling in and protected by guard rails at right angles to the fence

Over the pit are placed two specially made iron tracks like horizontal ladders each 2 ft 3 ins wide with high flanges on each side These tracks will carry up to a total loaded weight of three tons with a large margin of safety and will take any class of car with ample clearance. A by-pass is made on each side of the gap to connect up with the drive or road.

Hundreds of these arrangements now installed in private parks are said to be giving the greatest satisfaction.

The manufacturers of the device are Messrs Crossley Bros., Ltd. Openshaw Manchester.

CHROMADOR STEEL

Since the introduction of this new high tensile steel a year ago its manufacturers (Dorman Long & Co., Ltd. of Middlesbrough) have received orders amounting to nearly 30 000 tons. It has been used as an economical substitute for Mild Steel in bridges, buildings, cranes, motor chassis frames, locomotive frame plates, railway wagon underframes, colliery inches, sheet piling and ships plates. It has been approved by the Committee of the British Corporation Register of Shipping and Aircraft, the Bureau Veritas, and Lloyds Register of Shipping.

In addition this steel has lately been subjected to several series of tests both by the manufacturers and by independent authorities. These include the exact determination of the elastic curve and amount of yield, effect of repeated bending stresses, fatigue tests, tests on full sized struts of various sections, rivet tests, electric welding and corrosion tests.

The production of chromador now forms a regular part of the manufacturers' rolling programme and delivery can be effected in the same time as that required for mild steel.

The additional cost over that of mild steel is said to be 20 per cent. for sections and 28 per cent. for plates.

It is claimed for this steel that advantages and economies can be obtained in every class of structure by its use.

FBI MISSION TO MANCHOUKHO

The Federation of British Industries recently announced that it had decided to send an Industrial Mission to Manchoukuo for the purpose of studying conditions in that country and of ascertaining whether British Industry could co-operate with local interests in its development. The Mission will also pay a short visit of courtesy and goodwill to Japan with the object

of establishing friendly contact with the representative organisations of Japanese industry and commerce.

The Mission will be composed of the following members:—

Colonel Lord Barnby, C.M.G., C.B.E., M.V.O.,
Past President of the Federation of British Industries.

Sir Charles Seligman, Senior Director of Seligman Brothers, Ltd., Bankers; Vice-Chairman, Commercial Union Assurance Co.; Director, National Discount Co.

Mr. Guy Lockett, C.M.G., Director of the Federation of British Industries.

Mr. Julian Piggott, C.B.E., M.C., representing the British Iron and Steel Federation.

FINANCE.

NEW COMPANIES.

Orb Mill (Haguer), Ltd.

This concern has been registered as a public company of cotton spinners and manufacturers with a nominal capital of £75,000 in 10s. shares. The address is Orb Mill, Waterhead, Oldham.

Clare and Heyworth, Ltd.

This is a private company of cotton, silk, wool and stuff manufacturers, etc. Nominal capital £50,000 in £1 shares.

Lillywhites Holdings, Ltd.

This new company has been registered as a public company with a capital of £116,000 (200,000 10s. shares and 320,000 1s. shares) with the object of acquiring not less than 90 per cent. of the issued share capital of Lillywhites, Ltd., and of carrying on the business of an investment company. Power is also taken to carry on the business of athletic and sports outfitters.

The directors are: Mr. Geo. F. Gretton, Mr. H. J. Benedictus, Mr. Ernest C. Ashby and Mr. Frank A. Benedictus, all directors are of Lillywhites. Registered office: Criterion Buildings, Piccadilly Circus, S.W. 1

Diamond Record Sales, Ltd.

This concern has been registered as a public company with a capital of £100,000, divided into 60,000 £1 Preference and 160,000 5s. Ordinary, to carry on the business of manufacturers of gramophones and sound-reproducing apparatus of all kinds. Registered office: Fenton House, Fenchurch Street, E.C. 3.

British National Films, Ltd.

This company has been formed by a group of influential city interests hitherto not concerned with film production. The company announces its intention of making a series of British pictures in London for world distribution.

The directors are Major J. S. Courtauld, M.P., the chairman, who has long been interested in film production; Lady Yule, the widow of Sir David Yule, and Mr. J. Arthur Rank, managing director of Joseph Rank, Ltd.

Steel Works Deal.

Thos. W. Ward, Ltd., of Sheffield, have acquired the blast furnaces and steel works at Jarrow of Palmers Shipbuilding and Iron Company. The works cover about 35 acres fronting the River Tyne. The firm, which has an issued share capital of £1,803,207, also carries on the business of general engineers, shipbreakers, colliery owners, etc.

Palmers Shipbuilding and Iron Company was formed in 1865 and has an issued capital of £513,520, while debentures outstanding total £1,125,173. In August last Sir W. H. Peat was appointed receiver and manager for the debenture holders.

AMALGAMATIONS.

Engineers' Merger.

Registration details are now available of International Combustion, which has been formed to amalgamate International Combustion and its subsidiaries, Underteed Stoker Company, Combustion Steam Generator, Mining and Industrial Equipment, Combustion Engineering and the Detrick Arch.

The capital is £501,698 in 150,000 six per cent. Cumulative Preference and 351,698 Ordinary Shares of £1 each.

The directors are: Mr. Geo. R. T. Taylor, engineer; Mr. Bernhard H. Binder, C.A.; Mr. Noel Haywood Docker (director John Wilkes Sons and Mapplebeck); Mr. Leslie William Farrow, C.A.; Mr. Frank Hodges (director Lancashire Cotton Corporation); Lt.-Col. Sir Wyndham Portal Raymond, director of Wiggins Teape and Co. (1919); and Mr. Geo Clemens Usher, engineer. Mr. Usher has been appointed managing director.

Lancashire's New Fusion.

Combined Capital of £260,000.

A new company has been registered under the style of Newhey Rings Company, Ltd., for the purpose of amalgamating the businesses of Newhey Spinning; New Ladyhouse Cotton Spinning; Haugh Spinning and Manufacturing.

These concerns have a combined capital of £260,000 and own 89,148 ring spindles and 8,776 doubling spindles.

The directors of the new company include Robert Milne (chairman). Walter Heap, Joseph Crowther and Jos. H. Clegg, all of whom are on the Boards of the three companies.

INCREASES IN CAPITAL.

	£
Central Wagon Co., Ltd.	100,000
British Starch Corporation, Ltd.	99,800
Ideal Boilers & Radiators, Ltd.	1,699,000
Central Sugar Co., Ltd.	200,000
Wilmot-Breeden, Ltd. (Motor Accessories)	50,000
Sanitas Trust, Ltd.	44,000
China & Japan Telephone & Electric Co., Ltd.	125,000

CONTRACTS SECURED.

Aero-Engines for Greece.

The Greek Ministry of Air has placed a contract with Messrs. Armstrong-Siddeley Motors, Ltd., of Coventry.

for the supply of twelve Lynx engines and spares. The approximate value of the order is £13,300.

Radio Sets for Finland.

The Finnish Government has placed with Marconi's Wireless Telegraph Co., Ltd., a contract for the erection of a Droitwich type Transmitter at the Lahti Radio Station. The value of the contract is understood to be in the region of £38,500.

Wireless Apparatus for the São Paulo Police.

A contract for the supply of wireless apparatus for the use of the São Paulo Police has been awarded to the Companhia Nacional de Comunicações Sem Fio "Marconi," the local representative of Marconi's Wireless Telegraph Co., Ltd. The contract price is approximately £30,000.

A further contract has been awarded to this company for the supply and installation of nine wireless transmitting and receiving stations in Brazil. The material involved will be entirely of United Kingdom manufacture and the contract price is understood to be about £60,000.

Electrical Machinery for Copenhagen.

An order for rectifying plant for one of the substations of the Copenhagen Lighting Department has been secured by the General Electric Co., Ltd., of Birmingham.

Railway Equipment for India.

Sir W. G. Armstrong Whitworth & Co. (Engineers), Ltd., have received an order from the Great Indian Peninsula Railway for ten sets of locomotive cylinders for Capriotti gear and other equipment.

Locomotives for Colombia.

Kitson & Co., Ltd., of Leeds, have secured a contract for the Girardot Railway, Colombia, for the supply of two locomotives. The order is said to amount to £19,400.

Steel for China.

An order has been placed with the British Steel Export Association by the Chinese Government Purchasing Commission for approximately 1,406 tons of girders.

Electric Winding Equipment for South Africa.

The British Thomson-Houston Co., Ltd., of Rugby, have secured an order for two electric winding equipments for the East Rand Proprietary Mines, Ltd.

Orders have also been received for the installation of similar equipment at the Grootvlei Proprietary Mines, Ltd., and at the Crown Mines, Ltd.

Armoured Vehicles for Siam.

The Siamese Government have placed an order with Vickers Armstrong for thirty Vickers Carden-Lloyd light armoured vehicles at a price of approximately £30,000.

Gas Plant for Chile.

The Santiago Gas Company have placed an order with West's Gas Improvement Co. for the extension of their retort houses. The value of this order is said to be £33,500.

Diesel Engine for Mexico.

Gleniffer Engines, Ltd., have secured an initial order for a United Kingdom built "Gleniffer" high speed Diesel engine to be supplied to the Cia Products Nestle (Mexico) S. A.

South African Contracts.

In the face of the keenest competition from many parts of the world three United Kingdom companies have succeeded in securing very valuable contracts for the supply of locomotives and rolling-stock to the South African railways.

The chief competitors were Continental firms and particularly strenuous efforts were made by German and French undertakings to secure the business.

Prices had to be cut very closely in order to obtain the contracts, but none the less the success of the United

Kingdom concerns has caused considerable satisfaction in the industry.

Robert Stephenson and Co., Ltd., of Darlington, have received the locomotive order, comprising twenty engines costing more than £150,000. The contract for coaches has been split between the Birmingham Railway Carriage and Wagon Company, which will build twenty, and the Metropolitan-Cammell Carriage Wagon and Finance Company (which is jointly controlled by Vickers and Cammell Laird and Co.) will supply thirty vehicles.

Tyneside Shipping Contracts.

The largest contracts booked within recent months on Tyne-side have been made by Swan Hunter and Wigham Richardson, Limited, Wallsend. They have secured an order for a passenger motor-ship 150 ft. long and 1,000 tons deadweight for Canadian owners. They are to supply the propelling machinery, and the ship, which is to have electrical auxiliary machinery, will be built at their Walker shipyard. They have also received the contract for extensive repairs to the Napier Star (Blue Star Line). The work, which will last four months, includes extensive overhaul alterations and machinery repairs.

Ceylon Railway Order.

The Ceylon Government Railways have ordered a 20-ton Diesel shunting locomotive from Sir W. G. Armstrong Whitworth and Company of Newcastle-on-Tyne. The locomotive will be the first Diesel unit to run on the Ceylon railways.

Order for Lancashire.

An order from Greece for 1,700,000 yards of grey cloth is understood to have been secured by Joshua Hoyle and Sons, cotton spinners and manufacturers, of Bacup. The value of the contract is believed to be £50,000.

Some months ago it was announced that between 7,000,000 yards of grey cloth would be needed by Greek currant growers to protect the fruit from rain when it was drying. Tenders were submitted by a number of Lancashire firms and it is stated that the order referred to has been obtained in face of competition from Japanese, Russian and other foreign cotton manufacturers.

THE UNITED KINGDOM IRON AND STEEL INDUSTRY.

The level of operations in the British Iron and Steel industry continues to be well maintained. Pig iron production rose from 514,900 tons in June to 528,300 in July, which compares with 343,900 tons in July, 1933; there were 99 furnaces in blast in July as against 100 in June and 69 in July, 1933. Pig iron sales have tended to diminish slightly for seasonal reasons which have resulted in small additions to makers' stocks; the undertone remains good and a strong resumption of buying is anticipated during the early autumn.

The output of Steel Ingots and Castings totalled 718,200 tons for July as against 757,500 tons in June and 567,500 tons in July, 1933. Here the decline was partly seasonal and partly due to holidays taken in the Scottish Area. There has been an increase of activity in the market for semi-finished steel after a somewhat slack period which is believed to augur well for the future, but a recrudescence of Continental competition in semis is causing some concern. The demand for finished products is steady, being mainly on account of home consumers, although there have been some encouraging overseas inquiries, and exports in the first half of the year exceeded those in the first half of 1933 by 15 per cent. Makers of constructional steel and railway material are well placed.

While the United Kingdom is operating at about 75 per cent. of steel capacity Germany is producing at 65 per cent. of capacity and Belgium and Luxemburg at 60 per cent. The United States is producing at about 23 per cent. of capacity.

Producers of heavy steel are well employed; in tin-plates moderate business is being transacted at higher prices and inquiries are encouraging. In Sheffield the chief interest has been in foundry material; business in the steel market is good and shows signs of future expansion, there being an improvement in acid billets and a very heavy demand for steel strip and sheets (ordinary and stainless). Special steels are in good demand, whilst open hearth plants and rolling mills are busy.

In spite of the persistence of exchange difficulties and other barriers to foreign trade, exports of iron and steel are fairly well maintained. From 204,100 tons in

June they fell to 197,126 tons in July as compared with 156,143 tons in July, 1933.

Iron and steel imports rose sharply in July after the appreciable fall in June and were above the level for May and double those for July, 1933. The actual tonnages were 126,364 in July, 98,000 in June and 63,434 in July, 1933.

THE AUTOMOBILE AND ALLIED TRADES.

The annual summary of the industry for 1933 recently issued by the Society of Motor Manufacturers and Traders might well be described as the record of an epic achievement, for it graphically illustrates the expansion of the industry in spite of many hindrances, and demonstrates how it has become one of the most important factors in national life. Considerably more than 1,000,000 persons are employed in the manufacture, maintenance and operation of motor vehicles in the United Kingdom, while the employment of many others is dependent on the consequent distribution of ancillary work. The total gross receipts from the taxation of cars, commercial vehicles, hackney vehicles and tractors in the United Kingdom have increased from £20,965,623 in 1927 to £26,917,239 in 1933. In 1933 there were 1,738,972 motor vehicles in use in the United Kingdom as compared with 1,209,928 in 1927 and 811,947 in 1924.

Production of motor vehicles in the United Kingdom has increased from 146,000 in 1924 to 286,283 in 1933. Last year the production of private cars and taxis was in itself considerably in excess of the total production of all vehicles in 1924. Although nett imports of motor vehicles in the United Kingdom showed an increase last year as compared with 1932, the total of 4,109 vehicles to a value of £724,828 is less by over 19,000 vehicles and over £3,350,000 than the figures of such imports in 1924.

The figures of United Kingdom exports of motor vehicles indicate in a striking manner the advance which the industry has made in recent years, for in 1924 there were exported only 15,659 vehicles (value £4,869,459) which had increased last year to 51,692 (value £6,740,584).

100 PER CENT. INCREASE IN CAR EXPORTS.

During the first nine months of the current financial year the exports of Wolseley cars show an increase of exactly 100 per cent. over the corresponding period of the previous year. The largest percentage increases in relation to cars of the make in question are found in the comparatively new markets of the Far East; in China, Malaya and the Dutch East Indies, for instance, sales are actually six times as high as they were last year. The position in Australia shows a marked improvement on last year, which was in itself a very satisfactory period. South Africa is 68 per cent. up, New Zealand 100 per cent. and European countries as a whole 195 per cent. The greatest improvement amongst the larger markets is found in India, where the increase is not less than 273 per cent. These facts and figures all go to show that the United Kingdom car is definitely coming into its own even in countries which were previously opposed to it on the grounds of its comparatively low horse power and high price.

BRITISH TRIUMPHS IN THE ALPINE TRIAL.

Once again United Kingdom cars have carried off many of the important awards in the International Alpine Trial. Against strong competition from almost every European country they won 15 out of the 41 major awards, including team prizes in two out of the five groups. The trial started from Nice on the 17th August and ended at Munich six days later after an extremely arduous course of approximately 1,900 miles. Individual drivers were eligible for Glazier Cups, whilst manufacturers' teams of three competed for Alpine Cups, the principal awards. So strenuous was the event that only 94 out of 150 starters reached the finish.

Two successful British teams were the Triumph (in the 1,100 c.c. Class) and the Talbot (3,000 c.c. Class). Each won an Alpine cup, Talbots gaining 2,000 points and Triumphs 3,000, the latter representing maximum marks for each of the three drivers, Lt.-Col. C. V. Holbrook, Mr. J. C. Ridley and Mr. V. E. Leverett. In addition two other Triumph drivers—Mr. M. A. Newnham and Mr. D. M. Healey—won Glacier Cups without the loss of a single mark.

TO THE ARCTIC BY CAR.

To discover the possibilities of motoring, with specially constructed cars, across the Arctic wastes of Lapland is the object of a band of explorers who have just left England for Bergen, Norway. The expedition is led by Mr. R. R. Gordon Barrett, F.R.G.S., the well-known geographical expert, and transport will consist of two Riley nine army model cars. The large section tyres which are fitted to the army models for cross country work will prove equally useful for ice and snow; spades, pick-axes, etc., will be carried to enable the adventurers to cut their way through snow drifts and rugged ice.

From Bergen the party will climb inland, around Norway's highest mountains and through wild magnificent scenery to Trondhjem. Thence they will cross the snow-bound Kiolen mountains, enter the dense forest lands of Northern Sweden and come to Porjus, one of the last outposts of road, rail and civilisation. It is from here that progress will become slow and difficult, but it is intended to penetrate several hundred miles into and through Lapland. Eventually, although great difficulty is anticipated in crossing the Tuna torrent, it is hoped to join the "Great Arctic road" that the Finnish Government has recently constructed from the Baltic to the Arctic Ocean, and from this road to make excursions to many remote Lapp settlements.

TEXTILES.

COTTON.

The eagerly awaited estimate of American cotton production in 1934 was made by the Crop Reporting Board of the United States Department of Agriculture early in August. This estimate is 9,195,000 bales. The forecast compares with the final ginning estimate of last year's crop of 13,047,000 bales. While American growers restrict their own crop, cotton growers in other countries increase their output.

Figures compiled by the New York Cotton Exchange Service show the following estimate of world cotton consumption:—

World Cotton Consumption.

	1933-34.	1932-33.
	Bales.	Bales.
American cotton	13,564,000	14,405,000
Other kinds	11,542,000	10,235,000
All kinds	25,106,000	21,640,000
American carry-over . .	10,836,000	11,754,000
Other kinds (carry-over) .	5,054,000	4,493,000
World carry-over	15,890,000	16,247,000

With the American carry-over of 10,836,000 bales and the new crop now estimated, the total quantity of American cotton available is 20,031,000 bales.

Spot prices of American, East Indian and Brazilian cotton are all higher, as also is the price of Egyptian cotton.

There has been more inquiry for yarns and while orders have been few in the American section, some fairly good orders have been placed for Egyptian yarns.

The largest combine of coarse cotton spinners in Lancashire has recently increased its prices from the low level to which they fell when the Royton agreement was abandoned.

Inquiries for overseas have been fairly numerous, but offers have frequently been unworkable. China business remains on a small scale in spite of improved exchange. Some dyed specialities have been booked for South American markets, but the Egyptian and West African markets are quiet.

The exports of cotton yarns and piecegoods in July compared with June and July, 1933, are given below: Piecegoods show a considerable improvement.

	July, 1934.	June, 1934.	July, 1933.
Yarns.	1,000 lbs.	1,000 lbs.	1,000 lbs.
Grey	8,985	9,588	9,351
Bleached and dyed . .	1,297	1,057	1,061
	1,000	1,000	1,000
Piecegoods.	sq. yds.	sq. yds.	sq. yds.
Grey	28,849	25,622	25,114
Bleached	50,770	43,680	45,348
Printed	36,261	33,175	34,025
Piece-dyed	47,312	40,423	43,204
Yarn-dyed	6,857	5,878	6,987
Total piecegoods . .	170,055	148,778	154,678

WOOL

The Yorkshire Observer commenting in its issue of August 14th on the position in the wool textile industry states:—

“ One of the main causes of the better tone is the decision of the Australian selling brokers to allow the new season to open as arranged but with reduced offerings. What is needed above everything else is an adequate test of the raw material position so as to provide wool users with a clearly-defined basis. Everybody, in all sections of the market, has been afraid to enter into forward commitments.

It is evident that the market is not going to be flooded with more wool than it can absorb. That is indicated by the announcement that the position is to be reviewed by the selling brokers at the end of September and, if necessary, the selling programme will then be further amended.

Another factor which has contributed to the better tone is the knowledge that, following upon an unusually long period of quietness, there are contracts to be covered. Stocks of semi and tully manufactured goods in the hands of users and distributors must have been substantially reduced since the last buying movement, and there is a growing feeling that business will develop as soon as everybody is satisfied that raw material values have been stabilised.

There are many pertinent questions to which the trade is awaiting answers. Will Germany be a buyer to any substantial extent at the Australian sales? Will the reported decision of the Italian Government to halve purchases of wool in the Commonwealth make itself felt during the next few weeks? Will Japan buy up to the level of recent seasons? To what extent will the demand from France be affected by the loss of trade in tons with Germany?

All these considerations have a bearing on what is likely to happen at Brisbane next Monday and at subsequent sales in Australia, and because of the difficulty in providing the answers Bradford buyers are in a quandary with regard to the fixing of buying limits for the early sales. The fact that they are insisting on higher prices for tops is some indication of which way they expect the cat to jump.”

Bradford is hard hit by Germany holding up payments for goods which have been delivered and the amount involved is reported to be large. This in itself means restricted trade through capital being locked up and a reduced output of tops and yarns.

The exports to date of the principal wool textile semi-manufactures and tissues compared with the first seven months of 1933 are as follows:—

	<i>Jan.-July, 1934.</i>	<i>Jan.-July, 1933.</i>
Wool tops (thousand lbs.) . . .	25,266	26,286
Woollen and worsted yarns (thousand lbs.)	25,530	22,423
Woollen tissues (thousand sq. yds)	39,289	33,473
Worsted tissues (thousand sq yds)	20,298	18,353

LINEN.

The Northern Ireland Ministry of Agriculture report for July states that the flax crop is on the whole satisfactory. An official preliminary estimate gives the area under flax in Northern Ireland as 15,684 acres, as compared with 9,784 acres in 1933.

Activity in the yarn market has waned considerably, this being partly due to seasonal causes. In July, flax and hemp yarns to the value of £59,725 were exported as compared with £71,866 in June and £55,778 in July, 1933.

The value of linen exports fell to £439,392 in July as against £487,303 in June, this fall was mainly seasonal, and the value exported shows improvement when compared with that for July, 1933, when it was £422,165.

Exports of piecegoods to the United States of America fell to £69,819 from £97,537 in July, 1933. The figure for May was £189,505. Australian purchases continue to show considerable improvement, the value of piecegoods exported to Australia in July being £51,661 as against £36,070 in July, 1933. The exports to South Africa, Cuba and Argentina continue to make a good showing, but the Brazilian market is still in a very depressed condition.

The value of Damask table linens exported increased from £38,969 in July, 1933, to £42,484 in July, 1934,

this being mainly due to greatly increased shipments to Canada, shipments to the United States of America show however a substantial decrease. The handkerchief trade continues in a stagnant condition, the value of exports in July amounting to only £16,846 as compared with £30,249 in July, 1933.

The values of the imports of linen manufactures into the United Kingdom for the first seven months of 1934, 1933 and 1932 were £144,872, £153,638 and £218,461. The values of the exports from the United Kingdom for the same periods were respectively £3,518,013, £3,103,320 and £3,129,504.

The total quantities of piecegoods exported during the seven months ended 31st July, 1934, 1933 and 1932, were respectively 49,991,000, 44,779,000 and 41,706,000 sq. yards.

PAPER.

The slowing down of business which is usual at this time of the year owing to the holiday season is not very much in evidence as regards the paper industry. Most firms are fairly well engaged and newsprint mills are reported to be working to full capacity.

The exports of paper, cardboard, etc., for the first seven months of this year are higher both as regards quantity and value than for the same period of 1933, but slightly less than in 1932. Particulars are as follows:—

	<i>Quantity.</i>	<i>Value.</i>
1934 . . .	2,106,677 cwts.	£3,518,804
1933 . . .	2,094,279 cwts.	£3,378,370
1932 . . .	2,262,343 cwts.	£3,826,445

The following statement gives details of the values for the various sections:—

<i>Section.</i>	<i>Value of Exports.</i>		<i>Increase.</i>	<i>Decrease.</i>	<i>Inc. or Dec. per cent. over 1933.</i>	
	<i>1934.</i>	<i>1933.</i>			<i>Inc.</i>	<i>Dec.</i>
	£	£	£	£		
Newsprint in rolls .	895,789	510,167	—	114,378	—	22·4
Other printing paper	804,800	728,753	76,047	—	10·4	—
Writing paper in						
large sheets .	274,623	236,040	38,488	—	16·3	—
Wrapping .	254,866	201,738	53,128	—	26·0	—
Cardboard and mill						
board .	142,830	111,018	30,912	—	27·7	—
Stationery .	478,083	506,314	—	28,231	—	5·6
All other sorts	2,350,896	2,294,930	55,966	—	—	—
Total	£3,518,804	3,378,370	133,434	—		

In order to cope with increasing business the St. Annes Board Mill Co., Ltd., of Bristol, makers of coated boards and box boards of various kinds, have decided to instal an additional machine and have placed an order with Walmesley (Bury), Ltd., for a machine having a trim of 140 inches.

POTTERY AND GLASSWARE.

Most of the factories in the Potteries have been closed down for periods of a week to a fortnight for the annual holidays in accordance with the arrangements that have prevailed for many years.

The latest published employment figures indicate that 12,940 workers were unemployed or working short time compared with 15,289 at the corresponding date in 1933.

In the Tiles section of the industry output is still below the demand, but several new factories and extensions to existing ones which are now coming into production should shortly relieve the situation.

Unemployment in the pottery industry is greatest in the china and earthenware section, but prospects for the autumn and Christmas trade are considered to be reasonably good.

The demand for sanitaryware is good, and there is a marked improvement in the section producing electrical porcelain.

Following are details of the exports of pottery for the first seven months of 1934, together with comparative figures for the corresponding period of 1933:—

<i>Class.</i>	<i>Value of Exports.</i>		<i>Increase.</i>	<i>Increase</i>
	<i>1934.</i>	<i>1933.</i>		<i>per cent.</i>
	£	£	£	<i>over 1933.</i>
Tiles (all classes) . .	116,164	108,353	7,811	7·2
Sanitaryware . .	371,454	333,464	37,990	11·4
Chinaware . .	137,688	112,232	25,456	22·7
Electrical porcelain .	63,258	32,781	30,477	93·0
Earthenware of all other descriptions .	893,792	797,653	96,139	12·1
Refractory goods not otherwise specified .	156,720	138,972	17,748	12·8
All other descriptions	37,979	43,248	5,269	12·2
			(Dec.)	(Dec.)
Total .	1,777,055	1,566,703	210,352	13·4

Following are details of the exports of glass and glassware for the first seven months of 1934, together with comparative figures for the corresponding period of 1933:—

<i>Glass.</i>	<i>Value of Exports.</i> <i>1934.</i>	<i>1933.</i>	<i>Increase.</i>	<i>Increase</i> <i>per cent.</i> <i>over 1933.</i>
	£	£	£	
Scientific glassware .	52,525	39,155	13,370	34.1
Domestic and fancy .	102,783	82,262	20,521	24.9
Plate and sheet .	440,942	373,669	67,273	18.0
Bottles and jars .	134,046	157,551	23,505	15.0
			(Dec.)	(Dec.)
All other kinds .	59,546	50,827	8,719	17.2
Total .	789,842	703,464	86,378	12.3

AVIATION.

TRUSTWORTHINESS OF BRITISH AIRCRAFT.

A Wonderful Five Years' Record.

Nearly four hundred aeroplanes were engaged in the annual Royal Air Force Exercises, which occupied the greater part of three days and nights in the last week of July. Much of the flying was done by night and many of the daylight hours were affected by mist and low cloud. Conditions governing the "war" were naturally framed in the interests of safety, but duty at many aerodromes, especially perhaps where the squadrons of defending fighter 'planes were required to take off within little more than a minute of receiving notice that raiders were on the way, allowed small margin for error.

There is implicit, therefore, high tribute to the skill of United Kingdom personnel and the efficiency and dependability of United Kingdom aircraft and aero engines in the fact that, for the fifth successive year, no accident occurred. No aircraft was damaged and no participant injured. And this year nearly twice the number of machines was employed and something like 4,000 hours—equivalent to about half a million miles—were flown. In all, the Exercises of the past five years have provided approximately 15,000 hours—nearly two million miles—without an accident, a record without parallel in military aviation.

The manoeuvres were planned to exercise the defences of London. Searchlights and observation posts equipped

with sound-locators comprised the ground organization. Anti-aircraft batteries were not called into action. No defending balloon apron—steel cables slung from stationary balloons—was assumed. Most important of the omissions, the defending force was not equipped with bombers; counter-attack, which is the most effective form of defence against air raids, was not possible. The conditions were, therefore, largely artificial, and the defences of London cannot be considered as thoroughly tested by the Exercises, which were intended solely to instruct air and ground personnel. Nevertheless, the Air Ministry was able to report optimistically on the possibilities of defending the capital from determined air attack. (One night's official communiqué referred to the large proportion of raids which had been intercepted, stating that the number of interceptions of the bombers would probably mean enemy casualties in the neighbourhood of 33 per cent. and a serious lowering of the morale of the survivors. The communiqué added that "if this rate could be continued for two or three successive nights, our searchlights would find but little work to do".

The Ministry's opinion has particular interest for all countries where conditions resemble those obtaining in the British Isles, with vital objectives within a relatively short distance of the frontier. London, greatest city in the world and easy target for the bomber, is only sixty miles from the coast. Warning of the approach of raiders might not be received at the United Kingdom aerodromes till the enemy, equipped with modern machines and helped perhaps by a following wind, were near the coast and only fifteen or twenty minutes' flight from the capital. Their flying height, to clear the anti-aircraft barrage and the balloon aprons, might be nearly 20,000 feet. The task of the defending fighters is formidable. Incessant patrol of all of the sectors through which the enemy might fly is impracticable. Thousands of defending 'planes would be required, and their tactical control in mid-air would involve great difficulties. Hence the concentration of the Air Staff on fighters capable of successful interception, and the production by British aircraft designers of machines which in speed, rate of climb and fighting efficiency have no equals anywhere in the world. "Interceptor" fighters which have been in service with the Royal Air Force for more than three years can climb to a height of 20,000 feet, with full load

on board, in $9\frac{1}{2}$ minutes. Their maximum level speed at that height is 207 miles an hour; a few thousand feet lower they reach 215 m.p.h. In the dive, which is the usual method of attack by a single-seater fighter on bombing planes, they attain a velocity of more than 400 miles an hour. These are figures which no standard aeroplane yet commissioned for service in a foreign Air Force has approached. And new United Kingdom machines, some of which will soon be going into service, are even more efficient. Further development is proceeding rapidly; a United Kingdom fighter capable of level speeds in excess of 300 miles an hour should be flying well before the end of next year.

Bomb-launching at 300 M.P.H.

Diving-bombing, the spectacular form of attack on surface targets in which the aeroplane itself is aimed at the objective in a nearly vertical dive and the bomb released near the lowest point reached, was used for the first time in these exercises. This method of launching the bomb was tried experimentally during the War, but it was not accepted among the ordinary tactical methods of the Service till a few years ago. Its first use was in attacks on warships; trials proved beyond doubt its accuracy and the difficulty of countering it, and ground targets were brought within its scope.

Diving-bombing attacks are made by squadrons broken up into flight formation. In each flight the machines follow the leader in line astern, each diving at an angle of between 70 and 80 degrees from the horizontal and reaching a speed in excess of 300 miles an hour. The attacks are, therefore, extremely sudden and frequently entirely unexpected. One moment the raiding craft are specks in the sky, cruising at a great height and probably not even moving in the direction of the target; a few seconds later they have dived several thousand feet, launched their bombs, and begun, helped by the impetus of the dive, a climb back to a safe level.

Certain squadrons equipped with single-engined day bombing biplanes have devoted much time and study to the technique of diving-bombing. Personal experience of the dive-attack has convinced the writer, not only of its efficacy, but also of the admirable qualities of the aircraft employed. In dives at three hundred miles an hour, with the engine running at full bore, the aeroplane remained as steady as a rock. Vibration there was

none, and no component flexed under the enormous strain. (Experts will recall that some foreign aeroplanes tested in diving-bombing have broken in the air.) And many of the aircraft employed regularly on this work have flown nearly a thousand hours without overhaul! There is fine design and great robustness in United Kingdom aeroplanes.

FIRST FLIGHT FROM CANADA TO ENGLAND.

The first Canada-England flight and the 24th Atlantic crossing by aeroplane was achieved on the 9th August by Captain J. R. Ayling and Captain L. Reid.

These airmen left Wagsa Beach, Ontario, on the 8th August with the intention of establishing a new long distance record by flying to Baghdad, but they were compelled to land at Heston Aerodrome, Middlesex, after having flown 3,500 miles in 30 hours 50 minutes, on account of shortage of petrol.

THE SILENT AEROPLANE.

With all the amazing developments in aeronautics the problem of sound still remains, but it is understood that an advance has been made towards the development of a silent aeroplane. For the past fifteen years the Air Ministry have been experimenting with silencers, their requirements for an efficient silencer being that the back pressure must be limited to four inches; the noise must be reduced by about 25 per cent.; and the weight must not be such as to restrict too seriously useful load nor materially interfere with speed.

An exhaust silencer was recently tested at the Royal Air Force establishment at Farnborough which is reported to fulfil all these requirements. It was given a fifty hour test fitted to a 500 horse power Rolls Royce aero engine of the Kestrel class as used on fighters and bombers. The results were said to exceed in one or two particulars even the Air Ministry's requirements, as the back pressure measurement was only 2.9 inches, and the weight was only equivalent to a sacrifice of about eight gallons of petrol. Further, its stream-lined shape caused a loss of only 2 per cent. of power—ten horse power on a 500 horse power engine. The inventor, a London man, now proposes to fit it to one or two well-known types of aircraft for special tests at a London aerodrome.

PRIVATE FLYING.

In view of the small area of the United Kingdom, and its exceptionally fine network of motor roads, it is not to be expected that civil flying will develop to the dimensions possible in countries disposing over larger regions of land. But it is nevertheless gratifying to find that the number of private individuals availing themselves of this modern vehicle of transport is steadily growing. During the last six months British registered civil aircraft has increased from 995 to 1,148; of this 153 increase 102 machines are privately owned.

To own a private aeroplane is, however, still a pleasure reserved for the well-to-do, and numerous persons who have obtained their pilot's licence hire machines for their journeys. The air port of London most generally used by private flyers reports that during the month of June no less than 3,632 craft took off or landed there, 2,250 of which were engaged on private flights. "See Europe by air", seems indeed to have become the slogan in the United Kingdom this summer, and English and Continental flying clubs are exchanging group visits on a large scale. For those who wish to remain simply passengers, swift and luxurious air liners bring more than 70 European cities within a day's flying of London, while combined travel by air, land, and sea is available at quite reasonable prices. In many places air-ferries across the rivers of the United Kingdom are in operation, thus cutting down to a few minutes a journey which previously was often circuitous and slow.

CATALOGUE LIBRARY.

The undermentioned catalogues relating to United Kingdom manufacturers have recently been received and may be consulted by *bona fide* firms or individuals at the Office of His Majesty's Senior Trade Commissioner in India, Fairlie House, Fairlie Place, Calcutta:—

<i>Names and Address</i>	<i>Description.</i>
The British Thomson-Houston Co., Ltd., Rugby.	Synchronous motors and condensers.
*Charles Bryant & Sons, Ltd., Albion Works, Bryant Street, Winson Green, Birmingham.	Metallic Bedsteads.
Duke & Ockenden, Ltd., 126, Southwark Street London S E. 1.	"Dandorex" Windmills

<i>Names and Address.</i>	<i>Description.</i>
* F. J. Edwards, Ltd, 359-361, Euston Road, London, N.W. 1.	Steel Metal Working Machinery.
* John Fowler & Co (Leeds), Ltd., 113, Cannon Street, London, E.C. 4.	Petrol, Paraffin, Alcohol & Diesel Locomotives.
The Manganese, Bronze & Brass Co., Ltd., Caxton House, Westminster, London, S.W. 1.	Non-ferrous Alloys, Sparkless Tools, etc.
Herbert Morris, Ltd, Loughborough.	Electric Cranes.
Notton Grinding Wheel Co., Ltd., Welwyn Garden City, Herts.	Grinding Wheels, Bricks, Sticks and other abrasive products, etc.

Catalogues marked with an asterisk have also been received in the Office of His Majesty's Trade Commissioner, 3, Witlet Road, Ballard Estate, Bombay, where they may also be consulted by *bonâ fide* firms or individuals.

TRADE ENQUIRY.

The name of the United Kingdom firm referred to in the enquiry mentioned below will be furnished to reputable firms on application to His Majesty's Senior Trade Commissioner, Post Box No. 683, Fairlie House, Fairlie Place, Calcutta.

No. 841-34.

A United Kingdom firm, who manufacture a wire-tying machine for securing packing cases, etc., desire to appoint agents in India for the machine and for the wire to be used in conjunction with the machine.

H. M. TRADE COMMISSIONERS IN INDIA.

Calcutta—

Sir Thomas M. Ainscough, C.B.E.,
*His Majesty's Senior Trade Commissioner in
India and Ceylon.*

Mr. R. B. Willmot,
His Majesty's Trade Commissioner at Calcutta.
Post Box No. 683, Fairlie House, Fairlie Place.
Telegraphic Address.—"Tradcom, Calcutta."
Telephone No.—"Calcutta 1042."

Bombay—

Mr. W. D. M. Clarke,
His Majesty's Trade Commissioner at Bombay.
Post Box No. 815, 3, Wittet Road, Ballard
Estate.
Telegraphic Address.—"Tradcom, Bombay."
Telephone No.—"Bombay 23095."

Ceylon—

Imperial Trade Correspondent,
The Principal Collector of Customs, Colombo.

With Compliments.

OCTOBER



1934

The Commercial Bulletin

*A Monthly Review of Official and other
announcements relating particularly
to British Export Trade.*

Issued by
**HIS MAJESTY'S SENIOR TRADE COMMISSIONER
IN INDIA AND CEYLON.**

**FAIRLIE HOUSE,
FAIRLIE PLACE,
CALCUTTA.**

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GENERAL.

The Board of Trade returns for August do not point to any reversal of the gradual but steady revival of our overseas trade. Exports once more showed an increase over the corresponding month of last year, although the increase was smaller than in July. In August the exports of United Kingdom goods reached a total of £32,090,000 as compared with £30,996,000 in the corresponding month of 1933. Imports also at £60,027,000 were higher by about £3,500,000, the increase being due chiefly to larger imports of foods, raw materials, non-ferrous metals, machinery oils, fats and resins.

The export returns reveal that a larger number of industries share in the improvement in trade. Exports of coal were fractionally higher than last year, and comparatively large increases, amounting in each case to nearly half a million pounds, were shown by iron and steel, machinery and cotton—the latter notwithstanding the falling off of yarn exports to Germany. Other exports showing improvements were woollen and worsted manufactures—in spite of a similar fall in exports of yarns to Germany—chemicals and vehicles.

The Ministry of Labour estimates that there were approximately 10,170,000 insured persons aged 16 to 64 in employment in the United Kingdom on August 20th, an increase of 34,000 compared with July. Compared with a year ago 376,000 more persons were in employment and the decrease in unemployment since August, 1933, was 274,559.

ROYAL ACADEMY EXHIBITION OF BRITISH ART IN INDUSTRY.

The Royal Academy Exhibition of British Art in Industry, to be held at Burlington House, Piccadilly, London, in January, February and March next year, will be of great public interest and of vital importance to industry.

The Exhibition, sponsored by the Royal Academy and the Royal Society of Arts, will display the results of a closer co-operation between Artist and Manufacturer.

Sections have been formed for Dress Materials, Furnishing Fabrics, Carpets and Rugs, Ceramics, Glass-

ware, Gold, Silver and Jewellery, Leatherware, Book Production, Posters and Commercial Printing, Domestic Equipment, Furniture and Plastic Mountings. It will be the first occasion upon which industrial products have been shown in the Royal Academy.

The King and Queen are Patrons, the Duke of Connaught Vice-Patron, while the Prince of Wales as President of the General Committee is taking an active part in the enterprise, the most ambitious ever attempted in England.

Famous Architects and Artists.

The Executive Committee includes Sir Edwin Lutyens, Sir Giles Gilbert Scott, Mr. Reid Dick, Sir Felix Brunner, Colonel Sir Henry MacMahon and other well-known authorities under the Chairmanship of Sir William Llewellyn, President of the Royal Academy of Arts, and Vice-Chairmanship of Mr. John A. Milne, Chairman of the Royal Society of Arts.

Originality and beauty of design, colour and utility will be combined in British manufactured articles, most of them constructed specially for this Exhibition.

Structural alterations have been undertaken within the Academy for the housing of this contemporary exhibition.

A general change in decoration of the galleries will be a striking feature. Each room will have its individual colour scheme, designed by celebrated architects to feature the characteristics of the exhibits.

In the first room will be a display of the finest products of the Staffordshire "Potteries" in a setting of cream and gold. The designs will be the work of famous artists.

In another room will be glass of latest colour and design, a glittering avenue testifying to the progress made in recent years in British glass. Elegance and perfection of proportion will be characteristics of the exhibits.

In the leather room, colourful glories of all the latest types of leather will be allied to gold and silver. Here will be leather treated as elaborately as the most pliable fabrics, pleated, printed or coloured. Handbags will be a special feature and the frames will all be of British make.

The next room will contain gold and silver, precious and semi-precious jewellery in luxurious setting, the details of which will not be revealed until the opening day.

Furniture will be shown in cubicles, assembled by famous architects, who will thus create, along with furniture of new design, the type of room considered appropriate.

Britain's Finest Craftsmen.

Women visitors will be particularly interested in the domestic equipment section which will show how artfully beauty can be combined with practicality and utility. Lighting and heating equipment will also be shown.

A feature of the exhibition will be a display of shop fronts, where the latest methods of display, allied with novel structural features, will provide a fascinating corner. The articles in these windows will represent the work of some of the finest craftsmen and artists of England. Their display will be in the hands of authorities on arrangement and decoration. These window displays will be changed each week to show different industries.

Plastics, one of the largest and most important of British post-war industries, so far insufficiently recognised as a means of expressing art in design, will form an arresting section. A model snack-bar will contain the useful and beautiful in daily use; many other novel and useful exhibits in this adaptable material will be on view.

The next section will provide many women with ideas for their wardrobe, for the dress materials to be displayed will be of strictly modern weave and design, and of every possible combination of texture. Silks, satins, woollens, rayons and cottons will provide a feast of colour and design, the result of co-operation between artist and manufacturer.

The aim of this section will be to show that both in those dress materials in which the United Kingdom has long held pre-eminence and in those which it has hitherto thought could only be adequately produced abroad, the most fastidious lady of fashion can now satisfy her demands in Great Britain. Here, again, the work of many famous artists will be noted. These have produced designs that for originality and beauty have not been equalled.

Book production will provide the comfort and interest of the perfect library. Christmas cards, calendars and prints will vie with a brilliant display of posters and commercial printing.

The large hall, with its carpets designed by celebrated artists, will take the visitor back to the glories of the Persian Exhibition held in London in 1931. But these carpets, specially constructed for the British Art in Industry Exhibition, studiously avoid the archaic in design. Though each is entirely dissimilar each is a symphony of colour and harmony, combining an effect of supreme richness.

The closer co-operation between British artists and manufacturers of which this exhibition will be the expression, will benefit not only many industries, but will result, eventually, in a vastly widened field of public interest in taste, convenience and attractiveness.

SAFETY AT SEA.

The British Board of Trade regulations for the prevention and fighting of fires at sea are far more stringent than those of any other country. To this fact must be ascribed the remarkable immunity from fire enjoyed by United Kingdom liners. More drastic regulations are proposed in a series of recommendations recently drafted for submission to the Board of Trade as the result of an official inquiry by the principal United Kingdom shipping companies.

If the recommendations are adopted, United Kingdom liners will be compelled to carry complete fire brigades. Fire drill for members of crews is already compulsory, but a larger proportion will be compelled to qualify in fire fighting as well as in lifeboat drill. Fireproof paints only will be used for ships, and certain types of paints will be banned altogether, while the interior furnishings of ships will be constructed of fireproof materials. Ventilation flues will be fitted with apparatus to stop the air currents which now convert certain types of ships into raging furnaces in case of fire. Alley-ways will be sub-divided at more frequent intervals—in some cases by watertight doors in bulkheads, and in others by fire-resisting screens or doors. Finally, an increased stringency in regard to existing fire-prevention precautions will be insisted upon. With all these new regulations, the standard of safety on British liners,

high as it is already, will be such as to remove risk of danger from fire, as far as that is humanly possible.

A DICTIONARY OF COLOURS.

In these days, when competition for world markets is more strenuous than ever, every nation is continuously striving to improve its industrial technique. A far-reaching development in this direction is marked by the publication of a Dictionary of Colour Standards by the British Colour Council. This Dictionary consists of two volumes: one showing 220 colours on silk ribbon, with a name, number and code for each; the other giving a brief history of each colour. The task of compiling the Dictionary was an extraordinarily complex one, the varieties of shades attributed to most of the colours being astonishingly large. For instance, no fewer than 80 different sky-blues had to be considered; while even more surprising is the statement that 60 different whites and 40 different blacks were received.

The commercial importance of this standard work of reference can scarcely be overestimated. The range was selected on a system that makes it acceptable both as a colour-range for all the colour-using industries and for any educational work into which colour enters. Every colour has been measured scientifically and the data carefully recorded so as to ensure that the original standards shall be preserved in a form that admits of no error or variation. The Dictionary has been recommended by the British Standards Institution to the competent authorities in the British Colonies and Dominions, and there is little doubt that the range of colours will be accepted as standard throughout the British Empire—and possibly throughout the world.

NEW BRITISH BROADCASTING STATION.

The British Broadcasting Corporation decided some time ago that a new station should be built, with every possible technical improvement, of great strength, conveniently situated and, most important of all, completely self-contained.

The new station which has been erected at Droitwich transmitted its first programme on the 6th of September. This station was intended to be far more important than Daventry, not merely because of its power of 150 kilowatts, but because it is calculated to supersede the

London, West and North medium-wave transmitters, Droitwich functions on a wave-length of 1,000 metres, and should be heard with ease all over Europe and in many distant parts of the world is well. The new station consists of a squat stone building beside which are two slender lattice masts rising to a height of 700 feet. These great masts support immense aerials. They sway in the wind three or four feet out of the vertical and have red lights on their tops to warn aircraft at night of their existence. Four engines of 750 horse power supply enough power to light a township of 5,000 inhabitants. High tension current of 20,000 volts is generated. When the transmitter is working there are 25 valves of various sizes in action among which are giant valves costing £800 each and weighing 200 lbs. If one or more should fail, others would be immediately available to take their place. The whole station is the last word in efficiency, and it is expected that listeners abroad will be grateful for the additional clarity which it provides to the B.B.C. programmes. For the home service it is ideal.

BRITISH-GROWN BULBS

The special feature of the recent show of the Royal Horticultural Society in London was the exhibition of British-grown bulbs. The superb quality of the bulbs on display came as a surprise even to those who have followed the progress made by British growers during recent years. In perfection of size, quality and condition these British bulbs were obviously equal to anything obtainable from abroad and far superior to the average imported sample. The fine quality of the many varieties shown is all the more remarkable in view of the fact that it has so often been alleged that there is no land in England suitable for bulb production. This statement has frequently been made in the case of hyacinths, for instance, but judging by the comprehensive collection displayed, the exhibits clearly demonstrated that the art of growing hyacinths for bulbs has definitely been mastered in England.

A particularly interesting exhibit came from the Lincolnshire County Council's experimental station at Kirton. This illustrated the results of trials and experiments bearing on the production, storage and marketing of bulbs, and clearly demonstrated the valuable assist-

ance given by the Council to the new industry, on which the soil of Lincolnshire County is so well suited

The chief centres of commercial bulb cultivation in Great Britain are in Lincolnshire, Cornwall, the Scilly Isles, Cambridgeshire, Devon and Wales. The number of British bulbs produced in the autumn is in the region of 14,000,000 and the figure is growing fast every year.

FINANCE.

NEW COMPANIES

Clutson & Kemp Ltd

This concern has been registered as a public company with a capital of £200,000 in 100,000 six per cent Cumulative Preference and 100,000 Ordinary shares of £1 each.

The objects are to acquire the undertaking and assets of Clutson and Kemp, and to carry on the business of elastic web and fancy weavers, manufacturers of and dealers in all articles and fabrics containing elastic, twisted spinners and stuff manufacturers, cotton spinners and doublers, etc.

The first directors are to be appointed by the subscribers. Solicitors: Herbert Smith & Co., 62, London Wall. 1 (2

Austin Hopkinson & Co., Ltd

This company registered as a private company on 7th September with a nominal capital of £80,000 in 6,000 four per cent Cumulative Preference of £10 and 20,000 Ordinary shares of £1 each.

The company is to acquire the business of manufacturing engineers carried on by Austin Hopkinson and Martin Hopkinson at Delta Works, Audenshaw, Lancs., as "Austin Hopkinson". The permanent directors are Austin Hopkinson (managing director) and Martin Hopkinson.

Willes Bros & Co (Gipsy Queen), Ltd

This firm has been registered as a private company with a capital of £50,000 in £1 shares (49,000 five per

cent Cumulative Redeemable Preference and 1 000 Ordinary), for the purpose of acquiring the business of boot and shoe manufacturers carried on by Arthur Wilkes and John W Wilkes Leicester The first directors are Arthur Wilkes, of Thunby, near Leicester, Geoffrey W Wilkes, of Rothley, near Leicester, Clifford A Wilkes, of Thunby, Allan H Wilkes, of Belgrave Leicester, and Arthur D Wilkes of Rothley Solicitors Whetstone and Frost, of Leicester

INCREASES IN CAPITAL

	£
Monsanto Chemicals Ltd	799,000
John Ismay & Sons, Ltd (manufacturers of "Neon" signs, etc)	150,000
E A Langrish & Co Ltd (manufacturers of electric and wireless plant)	64,246

CONTRACTS SECURED

Railway Materials and Equipment

Contracts for the supply of 7,500 tons of steel rail, and 730 tons of fish-plates to South Africa have been placed with United Kingdom steel makers

The South African Railways and Harbours Administration has also placed contracts for 20 first-class coaches with the Birmingham Railway Carriage and Wagon Company and for 30 second-class coaches with the Metropolitan Cammell Carriage Wagon and Finance Company

A number of these coaches will be shipped to South Africa completely erected ready to be placed in service immediately on arrival.

Other contracts for equipment for overseas railways and road bridges include the following

The Crown Agents for the Colonies have ordered from the Gloucester Railway Carriage and Wagon Co, Ltd, 32 low-sided, all-steel bogie wagons, for service on the Gold Coast Government Railway, and from the Birmingham Railway Carriage and Wagon Co Ltd, Smethwick, four 30-ton flat-bottomed wagons for service on the Palestine Railways.

The Government of Mysore have placed with the Birmingham Railway Carriage and Wagon Co. Ltd. Smithwick through the Trade Commissioner for Mysore, London, an order for 10 bogie trucks for carriages complete with all fittings.

Road Bridges for Iraq

Contracts for the supply of the steelwork required for three new road bridges on the Government of Iraq have been awarded by the Crown Agents for the Colonies to Brathwaite and Co. Ltd. of West Bromwich. The first of these bridges is to be erected at Quile Abbasiyah over the river Tigris, and the other two over the rivers Chahalah and Musharah both tributaries of the Tigris. The Quile Abbasiyah bridge will have nine spans, the Chahalah bridge six spans, and the Musharah bridge four spans.

Electrical Plant for South Africa

The Johannesburg City Council has accepted the tender of the General Electric Co. Ltd. for the supply of 15,000 k W Turbo Generator and condensing plant. The value of the contract is £47,000. Seven tenders were received from firms in Czechoslovakia, Germany, Sweden and Great Britain.

South African Wireless Contracts

The Standard Telephones and Cables Ltd. of London have secured a contract for a Government Wireless Station at Roberts Heights, Pretoria, costing £16,000. The Station will serve the military and air forces and the South African and World press.

Water Meters for Western Australia

The contract has been placed with Messrs. James Balfour & Co. by the Western Australian Government for the supply of 10,000 water meters of United Kingdom manufacture. The value of the contract is stated to be approximately £27,750.

Pumps for India.

Messrs. Worthington-Simpson, Ltd., Newark-on-Trent, have recently secured the following contracts in India:—

United Provinces, Hydro-Electric Division.—233 Horizontal Split Casing Ball Bearing Electrically Driven Centrifugal Irrigation Pumping Sets complete with all valves, piping, etc. This contract includes the erection of these sets in the Meerut and Moradabad Areas, and the total value is approximately £13,000.

Pandharpur Water Supply.—One 14½" × 15" Vertical Triplex Deep Well Power Pump, complete with driving oil engine and accessories and including erection at site. The approximate value of the contract is £4,000.

Delhi Water Works Extension Scheme.—Seven large electrically driven Ball Bearing Horizontal Split Casing Centrifugal Pumps, including piping and controlling valves and erection. The approximate value is £5,000.

Gwalior Irrigation.—Three High Speed Diesel Engine Driven Unchokable Centrifugal Pumps on steel barges for canal operation, of an approximate value of £2,500.

His Exalted Highness The Nizam's Railways—through Messrs. Rendel, Palmer and Tritton.—One 16" Split Casing Centrifugal Pump with "Wright" Strainer, electrical equipment, valves, piping, etc.

Danish State Railway Electrification Extension.

The English Electric Co., Ltd., have received an order from the Danish State Railways for the complete electric control equipment for 20 Motor Coaches and 10 Trailer Coaches. The control equipment will be of the "All electric camshaft" type, which is operating successfully on suburban system in Madras, Bombay, Capetown, Vancouver, Japan, and in many other parts of the world.

This repeat order follows the contract placed by the Danish State Railways in July 1932, for the complete electric traction equipment for 42 Motor Coaches and 21 Trailer Coaches in connection with the electrification of the Copenhagen Suburban lines.

The success which has attended the first electrification has resulted in the decision now taken to extend the electrification from Hellerup to Holte.

Motor Gun-Boats for Egypt.

A tender for two coastal motor gun-boats has been placed with Messrs. Saunders, Roe & Co., East Cowes, Isle of Wight. The value of the contract is in the region of £37,000.

Egyptian Government Contracts.

Recent contracts for railway supplies placed with United Kingdom firms by the Egyptian Government include a contract value £31,057 for the supply of 100,000 Jarrah sleepers, placed with Messrs. Millars' Timber and Trading Co., London; a contract for 700 wagon covers (£4,147) to be supplied by Messrs. Low & Bonar, Ltd. of Dundee; and contracts for the supply by six United Kingdom firms of signalling materials for a total value of £3,279.

£2,250,000 Greek Contract.

Henry Boot and Sons, engineers and public works contractors, of Sheffield, has been invited by the Greek Government to construct the flood protection works of Kephinos, in Boetia, as well as those of Larissa Plain, in Thessaly.

The order follows a contract arranged three years ago, in connection with which the firm first carried out surveys in the province of Boetia, Thessaly, Epirus and Crete. The recommendations were accepted by the Greek Government, and the whole of the works will now be carried out at a cost of about £2,250,000.

Contract for London Firm.

Messrs. Topham Jones & Railton, Ltd., public works contractors, of Gt. George Street, S.W., have secured the contract for the extension of the West Wharf at Singapore Harbour. The value of the contract is about £600,000 and the work is to be done on behalf of the Singapore Harbour Board.

Messrs. Topham Jones & Railton built the graving dock at Singapore in 1909-12, and reconstructed the wharves and built the Lagoon dock in 1911-16. They built also the causeway, carrying railway and road, which joins Singapore to the mainland.

THE UNITED KINGDOM IRON AND STEEL INDUSTRY.

As a result of the usual holiday influences August was a quiet month in the iron and steel industry and orders in the main were confined to immediate requirements. The decline in business activity, however, was less pronounced than in previous years and the underlying tone of the market remained confident.

Towards the end of August an improvement set in which was continued during September. The number of inquiries has increased and consumers are placing orders to replenish stocks which were allowed to fall to a low level during the holiday season.

Generally speaking, manufacturers are optimistic regarding the outlook as it is anticipated that autumn and winter buying will be on an active scale.

As regards the major iron and steel producing areas the position in Sheffield is highly favourable and many plants are operating at or near to capacity. New orders are being received at a satisfactory rate. On the North-East Coast the tonnage on the order books at the end of August was approximately the same as at the end of July, and manufacturers are well occupied. Semi-finished material is in good demand and the building trades are purchasing considerable quantities of light structural steel. In Scotland the improvement noted in recent months is being maintained and is expected to continue until the end of the year at least. In South Wales, the tone of the market is firm and makers of semis continue to be well employed. There has been a slight improvement in the tinplate situation and heavy steel products are in good demand.

The total output of pig iron in the United Kingdom amounted to 503,300 tons compared with 528,300 tons in July and 362,700 tons in August last year. The number of furnaces in blast at the end of August was 97, a net decline of two compared with the end of July but a net gain of 24 compared with the end of August, 1933.

Iron and steel imports into the United Kingdom continue at a high level although they showed some decline in August when they amounted to 102,200 tons compared with 126,400 tons in July. So far during the current year imports have been at a rate of approximately

1,400,000 tons per annum compared with 970,000 tons in 1933, an increase of 43.3 per cent.

This heavy rate of importation reflects the deliberate policy adopted by the international steel cartel of quoting abnormally low prices in the United Kingdom, so as to maintain and increase their hold on that market and to offset the depreciation of sterling and the customs duties: in pursuance of this dumping policy Continental steel manufacturers have quoted prices in the United Kingdom which do not cover the economic costs of production.

The total production of steel ingots and castings in August amounted to 667,000 tons against 718,200 tons in the preceding month and 551,300 tons in August last year.

The steel industry in the United Kingdom has been operating during the present year at a rate representing an annual output of between $8\frac{3}{4}$ and 9 million tons, compared with an output of 7 million tons in 1933 and $5\frac{1}{4}$ million tons in 1932. The higher levels of operation during the current year are to be attributed in the main to the replacement of imports by domestic production and to the expansion in domestic demand. The United Kingdom industry has been successful in obtaining a higher share of the domestic demand, which has at the same time showed a substantial increase in volume.

While it is true, however, that the demand from the major domestic steel consuming trades has been the dominating factor in the improvement in the position of the iron and steel industry the progress which has been achieved in the export trade must not be overlooked.

Iron and steel exports from the United Kingdom in August amounted to 193,400 tons compared with 197,100 tons in July and 154,700 tons in August last year. During the past three months iron and steel exports have been at a rate representing rather less than 200,000 tons per annum, as compared with a monthly average for last year of 160,000 tons, representing an increase of approximately 25 per cent. This substantial increase in exports must be regarded as a highly commendable achievement particularly in view of the exceptionally difficult conditions which prevail in international trade at the present time and the numerous obstacles such as stringent import quotas and restrictions of exchange dealings.

Iron and steel exports have played an important part in the improvement in the United Kingdom export trade in general. Obviously there is still considerable room for further expansion, as the present rate of iron and steel exports from the United Kingdom is little more than half of the 1929 rate. It is reasonable to anticipate that the improvement of recent months will be maintained during the remainder of the year having regard to the better conditions obtaining in certain important overseas markets and, in point of fact, inquiries during recent weeks have been more numerous and seem likely to result in increased business.

MACHINE TOOLS.

Vertical Keyseating and Slotting Machine.

Messrs. Carter & Wright (Engineering and Machine Tools), Ltd., Pellon Lane, Halifax, have recently constructed a vertical keyseating and slotting machine for cutting keyways up to 1 in. wide in either cast iron or steel, the maximum length of stroke being 10 ins. and the working stroke of the cutter 9 ins. The drive is through a friction-clutch pulley, 14 ins. diameter by 4 ins. wide, running at 200 r.p.m., which operates through two changes of gearing and reduction gears to the stroke disc. For driving a 2 h.p. motor running at 1,000 r.p.m. is recommended.

The machine operates on the draw-cut principle, a small cutting tool being accurately and rigidly held in a reciprocating cutter bar. The cutter bar is firmly supported in a crank-driven reciprocating member or sliding ram. The upper end of the cutter bar has a full bearing support above the work and the rigidity of this support ensures accuracy throughout the full length of the stroke. The sliding ram moves in bearings of ample dimensions, provided with adjustment for taking up the wear.

The T slotted work table is 17 ins. long by 18 ins. wide and the traverse is $4\frac{1}{2}$ ins. Long wide bearing surfaces are provided to ensure a smooth feed and the maintenance of alignment. The table and feeding mechanism are mounted on pivots so that the table can be tilted in either direction, for cutting taper keyseats and keyseats in taper hubs, up to 1 in. per foot, without the use of wedges or tilting the cutter bar.

The feed motion which is variable, is taken from the stroke disc, and the feed is applied at the beginning of the stroke before the tool enters the work. In order to increase the life of the tool a relieving motion is incorporated, which comes into operation at the end of the cutting stroke and keeps the tool clear of the work on the return stroke. The column for the cutter bar supporting arm is $\frac{1}{4}$ in. diameter, and the distance from the cutter bar to the column is 18 ins.

To permit of the quick mounting of the work the cutter bar is made in halves, which are secured to the after the work has been placed in position. The cutter bars supplied with the machine are of high-carbon steel, from $\frac{1}{2}$ in. to 1 in. diameter, and are equipped with cutters of widths to suit customers' requirements.

WIRELESS.

THE NATIONAL RADIO EXHIBITION, 1934.

The National Radio Exhibition, organised by the Radio Manufacturers' Association, was held at Olympia from 16th to 25th August, 1934. The attendance for the nine days including two Saturdays, was 233,200, which compares with 209,155 in 1933. The show, as in previous years, was fully representative of the radio industry, and demonstrated to advantage the developments which have taken place in radio receiving apparatus during the past year.

The outstanding features of this year's exhibition were the development of universal mains operated receivers, the marked tendency of manufacturers to cater for those whose tastes and requirements are not entirely satisfied by standard receiving apparatus, and a very welcome indication of the growing recognition of the need for competent servicing of radio receivers. The amount of new testing and measuring equipment on show demonstrated convincingly the important work which has been done in devising means for the scientific analysis of receiver performance. The prices of all types of sets have again been reduced considerably.

The growing popularity of the superheterodyne circuit was demonstrated at previous exhibitions at which there were always a large number of straight sets on view. This year, however, the superheterodyne is practically

universal and the straight circuit into the back-ground.

As almost all of the manufacturers were this year staging a four valve (*plus* rectifier) AC superheterodyne as their principal exhibit it may be inferred that this set will be the most popular for the average listener.

There were also a number of three valve superhets which gave excellent results.

One well-known manufacturer has housed a very well designed four valve AC superheterodyne in a plain cylindrical cabinet of moulded bakelite with supporting ridges thereon. The tuning scale occupies a full semi-circle outside the grille of the loud speaker and can thus be read with the greatest ease. Another maker has produced an ingenious tuning scale which is illuminated by a green light on the medium wave which turns to red on switching to the long waveband at the same time changing the names of the stations appearing on the scale.

The majority of superheterodynes now on the market are fitted with some form of automatic volume control.

As already mentioned the outstanding feature of the show was the wholesale introduction of the AC/DC mains receiver. An isolated example was on show two years ago, but this time nearly every maker was showing at least one model and some had also adapted the circuit to their radiograms. This development will be very welcome to those who are connected to direct-current supply systems. The one midget set which was exhibited is considered to be a great advance on that of last year.

In spite of the trend towards the superheterodyne, manufacturers are still making ample provision for those who prefer straight circuits. These receivers usually cost two or three pounds less than the corresponding superhet. There were a number of very interesting multi stage "straight" receivers, all of course provided with A.V.C.

Some few years ago, listeners who were dependent on batteries had some cause to complain that their needs were not catered for at the Olympia show. A feature of last year's exhibition was the decided change of attitude in this respect and this year's has seen even more attention paid to battery sets. Production of up-to-date battery receivers embodying all the latest technical developments and offering an amazingly good performance

for an average anode current consumption of 10 milliamperes is now undertaken by all the leading firms.

The three valve, hf-det-ll. combination probably finds its most important application in this type of receiver. The entry of one well-known valve manufacturer into the set market is made with this type of set. A number of receivers in this category have non cored tuning coils.

A larger number of battery superheterodynes, comparable in every way with their mains counterparts but as a rule including an extra valve, were on show. In this class of receiver United Kingdom manufacturers are second to none.

Portable and transportable receivers have improved enormously during the last few years. Great attention was paid this year to one exhibit in the form of a battery portable no larger than the average box camera which employed a super regenerating two valve circuit and headphone reception. A range of 100 miles from any B.B.C. stations is claimed and it is extremely suitable for those who desire to listen to news items, etc.

A larger number than ever of mains transportables were to be seen this year. This type of receiver appears to be coming rapidly to the fore. Makers now claim reception on these receivers to be equal to that on sets using external aerial and earth.

Four manufacturers are now manufacturing radio receivers suitable for installation in motor cars. Unfortunately up to the present this particular market has been in the hands of American firms whose products are now well established in the public favour.

The "kit set" has almost disappeared from the market—only one large manufacturer offering models. This is not surprising as the demand has been steadily decreasing for a number of years.

The short wave receivers on show formed a very inconsiderable portion of the exhibition. Nevertheless, they attracted a good deal of attention from overseas visitors desirous of taking back a receiver capable of receiving the Empire short wave. One large manufacturer was showing a 7 valve "overseas" superheterodyne capable of bringing in stations on all wave lengths between 12 to 550 metres. This set is designed for AC operation and incorporates AVC. One new firm was exhibiting an all wave receiver designed for universal mains operation; this was the only one of its kind in

the exhibition. A few firms not actually manufacturing short wave receivers have short wave converters for attachment to their standard sets. The one specialist firm in this type of apparatus was exhibiting improved receivers and a large variety of components both for receiving and transmitting apparatus.

As mentioned above the prices of radio apparatus have fallen considerably during the last six months.

It is interesting here to compare the existing prices with those in force at the 1932 and 1933 Exhibitions:—

	1932.	1933.	1934.
	£ s. d.	£ s. d.	£ s. d.
1. Two valve (Det. Lf.)—			
Battery . .	4 10 0	4 10 0	4 10 0
Mains . .	10 0 0	7 10 0	6 17 6
2. Three valve (H.F. Det. Lf.)—			
Battery . .	14 14 0	7 7 0	5 15 0
Mains . .	18 18 0	11 11 0	10 0 0
3. Small superhets—			
Battery . .	not	11 11 0	11 0 0
Mains . .	available	13 13 0	12 0 0
4. Medium superhets—			
Battery . .	23 0 0	13 13 0	13 0 0
Mains . .	...	15 15 0	14 0 0

It should be noted that the technique of sound amplification, originally developed for radio reception, has been turned to good account in alleviating the lot of those who suffer from deafness. Many new developments were exhibited at this year's show as the result of co-operation between the aurists and the radio engineer. Considerable interest has been aroused in the deaf aid receiver produced by one manufacturer which in addition to the usual loudspeaker embodies arrangements for a deaf person to listen simultaneously through headphones. By the operation of a switch the loudspeaker can be converted into a microphone to enable the deaf person to listen to conversation taking place in the room. The success of this receiver is no doubt due to the design of the output circuit which overcomes the makings of the high notes by strongly reproduced tones in the lower and middle register which always trouble deaf persons.

An increasingly large number of manufacturers are now producing high quality amplifiers for gramophone reproduction and public address work. Some of these firms are also engaged in the manufacture of high fidelity receivers.

The widespread manufacture of moving coil loudspeakers continues, but is becoming more and more restricted to trade with set manufacturers as the demand from set constructors decreases. None of the manufacturers have introduced any important modifications this season. However, the frequency response of the average loudspeaker always claims the attention of the designers and this year is better than ever before.

Many new components were being shown for the first time.

A large number of makers are now producing powdered iron coils. A number of these firms are marketing composite tuning units comprising matched coils and condensers. These units certainly lessen the work of the home set constructor and assist him in obtaining better results.

The new season's gang condensers are of definitely smaller size; this has one great advantage in that it makes for a more rigid construction and the risk of condenser units becoming mis-matched in transit, or during assembling on the chassis is lessened considerably.

An examination of any receiver chassis at the exhibition revealed the very important part played by fixed condensers and resistances in the construction of a modern set. From this one will not be surprised at the considerable attention which has been devoted to these two components. It is interesting to note that nearly all the new fixed resistances are of the composition type. The wire wound variety are now only used for heavy duty.

The overseas visitor had plenty of choice in the matter of short wave components this year.

All the prominent manufacturers of valves were exhibiting; one of the chief developments of recent months has been the production of universal valves of which specimens were to be found on most stands. The valves are all of the indirectly-heated type, and are intended to be operated with their heaters connected in series. Each range, therefore, is designed for constant current rather than constant voltage operation.

TEXTILES.

COTTON.

Spot and future prices of American cotton fell following the revised forecast of the American cotton crop, which estimated an increased yield of 57,000 bales larger than the August figure. Spot prices of Egyptian and East Indian cotton were also lower. More Indian cotton has been consumed by Lancashire during the 1933-34 season than during 1932-33.

A committee has been appointed to administer the new compulsory coarse counts yarn price agreement known as the Royton Pact. It is stated that 31 mills controlling about three million spindles have agreed to join and that there are only 2/3 firms still outside the pact.

Trade in American yarns has been patchy and very little export business is being done in Egyptian yarns.

Far Eastern business has been poor recently, only spasmodic enquiries have been received from India, chiefly from Karachi; China also has been quiet.

Small lots of mulls have been booked for Egypt and special prints for West Africa; a few specialities have been ordered for South American markets.

Australia, Canada and South Africa have sent orders for printed and dyed goods and the United States for poplins.

The exports of cotton yarns and piecegoods in August compared with July and August, 1933, are given below. The figures for piecegoods show a considerable increase over August of last year, but a slight falling off when compared with July, 1934.

	<i>August.</i> <i>1934.</i>	<i>July.</i> <i>1934.</i>	<i>August.</i> <i>1933.</i>
<i>Yarns.</i>	<i>1,000 lbs.</i>	<i>1,000 lbs.</i>	<i>1,000 lbs.</i>
Grey	8,883	8,085	9,894
Bleached and dyed	1,295	1,297	1,139
<i>Piecegoods.</i>	<i>sq. yds.</i>	<i>sq. yds.</i>	<i>sq. yds.</i>
	<i>1,000</i>	<i>1,000</i>	<i>1,000</i>
Grey	28,172	28,849	25,613
Bleached	49,139	50,776	44,055
Printed	36,390	36,261	31,477
Piece-dyed	48,566	47,312	40,843
Yarn-dyed	6,476	6,857	6,977
Total piecegoods	168,743	170,055	148,963

WOOL.

The fifth series of London wool auctions opened with a decline in prices of 5 to 10 per cent. compared with July values. The raw material is still feeling the lack of support from Germany and in this connection the Wool Record and Textile World comments in its issue of 23rd August as follows, under the title Flexible Marketing System:—

“ It may be argued that this season the outlook is even more obscure than usual owing to the attitude of Germany and the threatened curtailment of imports by Italy. It is possible, however, to attach too much importance to developments in this direction. Germany is not likely seriously to jeopardise her great wool textile industry by voluntarily cutting off her raw material supplies. At present she is using stocks, and with every care in the rationing of supplies she must come to the end of her resources at no very distant date. Unless Germany is to face complete collapse she must maintain employment, and ways and means will have to be found to finance import. Similarly, Italy may find it necessary to reduce her imports of wool, but only because under existing conditions she lacks an adequate outlet for the products of her mills. In other words, wool will be bought to meet definite requirements, and not merely for speculative purposes. Japan, also, will see to it that her modern industry is kept well supplied with essential raw material, for that is what wool is in all countries in which the textile industry is of major importance. It would seem, therefore, that while there is a distinct possibility of a regulated flow of wool into certain countries, there is not much fear at present of the channel being completely blocked. The result may be a more protracted selling season and, in consequence, a more stable level of values throughout the season, but provided that level ensures a reasonable price to the grower it should not occasion any real anxiety. In this connection it is necessary to bear in mind that the wool marketing system is sufficiently flexible to enable growers and selling brokers to adapt it to varying requirements and conditions. It is, indeed, a vindication of private enterprise, and in view of past achievements in the handling of huge clips during

periods of acute depression, it is not too much to expect that the soundness of the system will again be demonstrated."

There has been some improvement since the holidays in the medium woollen section (Colne Valley) of the Huddersfield District, but this improvement has not been shown in the worsted section. Scotch tweed manufacturers have had varied experiences; some have received orders for outstanding novelties, but others are still awaiting confirmations from merchants. Manufacturers of cheviot trouserings are reported to have had good selections taken up by Continental buyers, but confirmation of orders is problematical.

West of England manufacturers are a little better employed than during recent weeks.

The Dominions are taking the bulk of the flannel piecegoods exported, but this is below the normal.

Trade in the heavy woollen district of Dewsbury is fairly good and most manufacturers are working full time, business with the Dominions in particular being very satisfactory.

LINEN.

This season's Irish flax is reported to be of good average quality, though only a few lots of scutched flax have so far come on the market. In yarn, business is quiet, though the outlook is good.

Linen goods exported in August amounted to £474,084, as compared with £439,392 in July and £481,963 in August, 1933. Exports of piecegoods to the U. S. A. showed a marked decrease for the month, the value being only £55,923 as against £116,118 in August, 1933.

Despite the rather disappointing returns of exports to that market during recent months the total value of exports for the eight months of the year is about £40,000 more than for the same period of last year.

The improvement in the Australian trade has been well maintained, and the August exports of piecegoods to Australia, which amounted to £55,005, were almost equal to the American figure. Exports of piecegoods to South Africa, New Zealand, Canada, Madeira, China and the Argentine maintain an upward trend.

The value of damask table linens exported in August amounted to £52,105, compared with £42,484 in July, 1934, and £63,784 in August, 1933, and handkerchiefs were exported in August to the value of £26,350, as against £32,419 in August, 1933.

Linen manufactures imported into the United Kingdom for the period January-August, 1934, 1933 and 1932 were £161,870, £179,863 and £249,076, while the value of exports from the United Kingdom for the same periods were respectively £3,992,097, £3,585,310 and £3,469,504.

The total quantities of piecegoods exported during the first eight months of 1934, 1933 and 1932 were respectively 55,345,000, 50,911,000 and 45,215,000 square yards.

THE KINEMATOGRAPH INDUSTRY.

A signal honour has been paid to the United Kingdom film industry by the selection of the Gaumont British picture "Man of Aran" for the premier award as the best foreign film shown at the Second International Exhibition recently held in Venice. This picture was awarded the Mussolini Cup, and its success is particularly noteworthy as having been gained in competition with the best product of other nations.

The Gaumont British Picture Corporation of London announce that they will shortly be setting up a distributing organisation for the sale of their pictures in the United States of America. The chief American firms have for many years had branch offices and selling organisations in the United Kingdom, but no British company has up to now set up its own offices for the distribution of its products in an overseas market. The development now contemplated marks, therefore, a notable stage in the progress of the United Kingdom film industry.

AVIATION.

UNITED KINGDOM AIRCRAFT DOMINATE INTERNATIONAL EXHIBITION.

Success of the Copenhagen Show.

More than 110,000 people paid for admittance to the international aircraft exhibition which was held at the

Forum, Copenhagen, from August 17 to September 2. The figure is impressive, especially in view of the relatively small population of the city and its surroundings, and indicates the complete success of an enterprise in which the United Kingdom industry played a vital part.

United Kingdom aircraft material occupied more than half of the floor space. A "group exhibit", bringing together the products of twenty-eight firms under the auspices of the Society of British Aircraft Constructors, filled an entire bay of the building and accounted for rather more than one-third of the floor area. Directly alongside, occupying the centre of the hall, were the stands arranged and controlled by the Army and Navy air services; the bulk of their flying equipment consists in aircraft and aero engines, which predominated, therefore, on these stands. And the general opinion was that the British section had been more efficiently organised and was more impressive than any other of the national exhibits.

As many as sixteen thousand people visited the Show on one day alone. Sometimes up to 5,000 were present in the hall at the same time, making movement about the stands and gangways a slow and difficult affair. Groups of military and civilian air experts, some of them unofficial, but none the less important missions of enquiry and investigation, came from many countries, from the Soviet Union, the Netherlands, Germany, Poland and from the Scandinavian and Baltic states—Finland, Sweden, Norway and Lithuania. Discussions which may have tangible results in the placing of future orders took place between these expert and critical visitors and the sales representatives of United Kingdom firms.

The Exhibition was honoured with exalted patronage. The King of Denmark, Prince Axel of Denmark, and the Crown Prince of Sweden—all three of them keenly interested in aviation—paid lengthy visits. High officers of the Danish Navy and Army went to the show day after day, or visited Kastrup aerodrome to watch flying demonstrations by United Kingdom civil and military aircraft. Inspired by the growth in "air-mindedness" inseparable from the visit of a hundred thousand people to the Exhibition proposals which have been under discussion for some time for the establishment of Denmark's first purely civil aerodrome suddenly crystallised. The organisers felt encouraged to go ahead at once and the aerodrome should be working within the

next few months. At Kastrup many well-to-do young Danes watched with admiration the evolutions of modern United Kingdom light aircraft, and numerous enquiries were made as to the possibility of buying machines. Several important business houses are also studying ways and means of employing the flying machine to expedite affairs.

A Successful Enterprise.

The Society of British Aircraft Constructors has, therefore, every reason to be satisfied with the results of its decision to organize a combined United Kingdom exhibit at Copenhagen. Without British support, the Exhibition might never have materialized; in the upshot its organizers have cleared a handsome profit—all expenses were covered by the first week's takings—and the United Kingdom industry has gained stature and prestige in Scandinavian and Baltic opinion.

The twenty-eight United Kingdom firms comprised makers of aeroplanes, aero engines, materials employed in aircraft construction, instruments and accessory equipment. Among the aircraft sent to Denmark were the new Armstrong Whitworth Scimitar single-seater fighter, demonstrated magnificently at Kastrup by Flight Lieutenant Turner-Hughes, the Avro Type 626 military trainer, two Avro-built autogiros, a Moth Major two-seater light biplane, the Percival Gull cabin monoplane and the Airspeed Courier powered with the new Napier Rapier 16-cylinder engine. Other leading companies—Fairey, Gloster, Hawker, Short, Bristol, Vickers—showed models and photographs.

The engine firms represented were Armstrong Siddeley, Bristol, Cirrus-Hermes, Napier and Rolls-Royce. In all, nine engines were shown, some of them sectioned to show internal component parts. They ranged from 130 h.p. units intended primarily for light single-engined craft to 700 h.p. engines designed for installation in powerful military aeroplanes. Most kinds of aircraft and aero engine materials and accessories are made by one or other of the thirteen firms whose exhibits completed the "England" section. They included special alloys and steels, all kinds of wheel and brake equipment, navigational and recording instruments, armament gear, magnetos, dynamos, radio apparatus, carburettors, sparking plugs, aerial cameras and camera-guns, and every sort of fitment for fuel, oil, and water systems.

200 m.p.h. Fleet Fighter.

Dwarfing every other machine in the Forum was the Hawker Dantorp torpedo-bomber a biplane powered with a Siddeley 800 h.p. Leopard engine which was shown by the Royal Danish Naval Dockyard. This machine is constructed under licence in the dockyard and is employed for longrange reconnaissance in Scandinavian waters. Near to it was the first Hawker Nimrod single-seater fleet fighter to be built in the dockyard, which is at present engaged on a batch of ten of these extremely fast and efficient aeroplanes. The Nimrod is intended for over-water flying and, like similar craft in the British Fleet Air Arm, carries a big load in armament, fuel and navigational instruments. Nevertheless, a placard beside the machine claimed maximum level speed (attained in official trials) of 200 miles an hour, economical cruising speed of 162 m.p.h., climb to 16,400 feet above sea-level in 8 minutes 50 seconds and a service "ceiling" of 32,800 feet. Power is supplied by a Rolls-Royce Kestrel motor. In addition to two machine-guns the Nimrod is equipped to carry four 28-pound bombs in a rack fixed on the underside of the starboard lower wing.

Incidentally, one of the most popular "turns" at the Exhibition was provided by the skilled artisan on the dockyard stand who was engaged, oblivious to thousands of pairs of watching eyes, in making wooden ribs for Nimrod wings.

British influence was again dominant on the stand of the Royal Danish Army Air Service. A de Havilland Tiger Moth light trainer and Gipsy Major 130 h.p. engine, a Bristol Pegasus 700 h.p. radial motor, under-carriage components and radio apparatus of United Kingdom manufacture, made up the bulk of the exhibit. The Dutch-designed general purpose biplane on view had a Pegasus engine. Every foreign visitor, well aware of the business acumen and shrewdness of the Danes and of the efficiency of their small but highly skilled air forces, must have appreciated the interest and importance of the predominance of United Kingdom material on the Army and Navy stands.

CATALOGUE LIBRARY.

The undermentioned catalogues relating to United Kingdom manufacturers have recently been received and

may be consulted by *bonâ fide* firms or individuals at the Office of His Majesty's Senior Trade Commissioner in India, Fairlie House, Fairlie Place, Calcutta:—

<i>Names and Addresses.</i>	<i>Description.</i>
Gunn & Moore, Ltd., Nottingham.	Sports Requisites.
E. L. Youngleson, Ltd., 67/69, Chancery Lane, London, W.C. 2.	Wire-Tying Machine.
John Thompson Water Tube Boilers, Ltd., Wolverhampton.	Boilers.
Gabriel & Co., 4 & 5, A. B. Row, Birmingham.	Railway Carriage, Tramcar, Motor and Omnibus Fittings.
"Solus" Electrical Co., 100, Judd Street, London, W.C. 1.	Transformers for X-Ray and Commercial purposes, Shockproof X-Ray Installations, etc.
Tylors (Water & Sanitary), Ltd., Belle Isle, York Road, London, N. 7.	Water Meters & Fittings.
F. J. Edwards, Ltd., 359-361, Euston Road, London, N.W. 1.	Sheet Metal Working Machinery.

Catalogues marked with an asterisk have also been received in the Office of His Majesty's Trade Commissioner, 3, Wittet Road, Ballard Estate, Bombay, where they may also be consulted by *bonâ fide* firms or individuals.

H. M. TRADE COMMISSIONERS IN INDIA.

Calcutta—

Sir Thomas M. Ainscough, C.B.E.,
*His Majesty's Senior Trade Commissioner in
India and Ceylon.*

Mr. R. B. Willmot,
His Majesty's Trade Commissioner at Calcutta.
Post Box No. 683, Fairlie House, Fairlie Place.
Telegraphic Address.—"Tradcom, Calcutta."
Telephone No.—"Calcutta 1042."

Bombay—

Mr. W. D. M. Clarke,
His Majesty's Trade Commissioner at Bombay.
Post Box No. 815, 3, Wittet Road, Ballard
Estate.
Telegraphic Address.—"Tradcom, Bombay."
Telephone No.—"Bombay 23095."

Ceylon—

Imperial Trade Correspondent,
The Principal Collector of Customs, Colombo.

With Compliments

NOVEMBER



1934

The Commercial Bulletin

*A Monthly Review of Official and other
announcements relating particularly
to British Export Trade.*

Issued by

**HIS MAJESTY'S SENIOR TRADE COMMISSIONER
IN INDIA AND CEYLON.**

**FAIRLIE HOUSE,
FAIRLIE PLACE,
CALCUTTA.**

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GENERAL.

The Board of Trade returns for September are most encouraging, the month's exports being higher than in any other month this year. The following is a comparison of the September figures:—

	<i>September, 1934.</i>	<i>August, 1934.</i>	<i>September, 1933.</i>
	£	£	£
Imports	57,738,498	60,027,050	57,727,163
Exports	33,957,218	32,000,600	32,226,257
Re-exports	3,219,836	3,301,597	3,403,774

This brings the total increase in exports for the nine months ended 30th September to £20,657,895, compared with the corresponding period of 1933. Practically the whole of the month's increase is accounted for by larger exports of manufactured goods, which have risen from £24,707,864 in September, 1933, to £26,347,776 in the month under review.

Under this heading the following increases are shown:—

	£
Iron and steel	685,000
Electrical goods	142,389
Machinery	328,000
Vehicles	808,878
Cotton yarns and manufactures	75,000
Woollen yarns and manufactures	61,000
Cutlery and hardware	78,000

Some of the most notable increases in iron and steel exports were to the following countries:

	<i>September, 1934.</i>	<i>September, 1933.</i>
	£	£
Russia	193,725	19,510
China	189,130	68,129
Australia	252,808	120,899
Denmark	156,080	95,958
Argentina	176,045	112,834

Of the increase in vehicles, which include locomotives, ships and aircraft, the amount £320,700 is attributable to a training ship built for the Brazilian Navy.

The increase in exports of mechanically propelled road vehicles is still more striking. These have risen from £569,363 in September, 1933, to £929,073, an increase of £360,000, almost entirely in respect of motor cars and parts.

Some of the increases in exports in the "vehicles" class as a whole are as follows:—

	<i>September, 1934.</i>	<i>September, 1933.</i>
	£	£
Brazil	370,894	29,666
British India	260,733	242,365
South Africa	201,730	94,874
Australia	174,170	108,324
New Zealand	126,835	57,057
China	73,554	16,740
Egypt	55,361	17,737
Spain	66,926	41,613
British Malaya	55,580	22,364
Argentina	48,099	23,996
Sweden	32,287	17,678
British East Africa	21,189	11,692
Irish Free State	86,315	76,050

Exports of commercial vehicles increased in value to £68,102, motor cycles and tri-cars showed a small increase to £27,627, and the exports of bicycles increased by £14,000 to £64,435.

The abandonment of prohibition in the United States of America expresses itself in the increase in the beverage class, exports of which have risen by £213,000. In September, 1933, 208 gallons of spirit were exported to that country, the value being £339. In September of this year 80,642 gallons to the value of £120,149 were shipped to the United States.

Coal exports show a rise of £87,523, at £2,847,137. Finland increased its purchases from 43,000 tons in September, 1933, to 113,000; Sweden, 197,000 tons to 283,000 tons, and Brazil from 36,000 tons to 78,000 tons.

During the first nine months of this year the domestic exports from Great Britain of manufactured goods to British countries totalled £112,500,000, compared with £110,800,000 to other countries. In other words exports to the Empire of manufactured goods exceeded those to the rest of the world.

The New Zealand trade figures disclose the following proportion of imports from the United Kingdom:—

	<i>Total Imports.</i>	<i>Supplied by the United Kingdom.</i>
	£	£
Cotton piecegoods	524,000	474,000
Woollea piecegoods	287,000	277,000
Miscellaneous apparel	409,000	330,000
Motor vehicles	849,000	579,000
Iron and steel tubes	103,000	92,000
Miscellaneous hardware	160,000	111,000
Earthenware and china	44,000	35,000

Practically every major manufacturing industry in the United Kingdom benefits by this preference for United Kingdom goods.

The Ministry of Labour estimates that there were 10,233,000 insured persons in employment in the United Kingdom on 24th September. This figure is higher than at any time since November, 1929. The highest recorded number of insured workers in employment was 10,316,000 in September, 1929; the lowest during the past ten years was 9,144,000 in September, 1932, so that in two years industry has almost recovered to its pre-crisis level. The present figure shows an increase of 352,000 as compared with a year ago, and of 63,000 as compared with the end of August, 1934.

SIXTH INTERNATIONAL CONGRESS FOR SCIENTIFIC MANAGEMENT.

Never has the need for good management in every sphere of national life been so acute as it is to-day. The announcement that the Sixth International Congress for Scientific Management is to be held in London in July next year is thus of considerable importance. The object of the Conference as a whole is to publish papers and to arrange discussions on practical applications of management in all its phases. It is hoped to awaken a real consciousness as to the importance of the adoption of the best principles of management. To this end a strong council has been formed in England under the Chairmanship of Sir George Beharrell, D.S.O., Managing Director of Dunlops. Members of the Council, which was in

the first place called together on the initiative of the Federation of British Industries, include representatives of associations connected with management in all its aspects, industrial, agricultural, commercial, domestic. An eminent representative Executive Committee of industrialists has been formed to supervise the organisation of the Congress.

H. R. II. the Prince of Wales has consented to act as Patron and is expected to open the Congress. Several Government Departments are co-operating actively. H. M. Government is giving a reception to delegates probably at the Royal Palace of Hampton Court. The Court of Common Council of the City of London has invited Congress members to an evening reception in Guildhall.

Among the subject to be discussed are:—

Methods of controlling production.

Standardisation as a factor in agricultural development including standardisation of equipment, methods and produce.

How far can Scientific Management in the home contribute to the raising of the standard of life?

Concrete examples of the application of scientific management to distribution in manufacturing, wholesaling and retailing.

Methods of selection, education and training of personnel suitable for high administrative positions.

What are the correct methods of inculcating modern management principles and practices in large-scale, medium and small undertakings?

The subjects chosen for the Sixth Congress are attracting a really valuable set of papers illustrative of management practice throughout the world. Many representative British factories are offering hospitality to members, and visits to these factories will show delegates that British Industry fully realizes the importance of the best principles in management.

Fuller programmes and membership forms will be available in November on application to H. Ward, M.Sc., 21, Tothill Street, London, S.W. 1.

BRITISH INDUSTRIES FAIR.

*Prosperity Road.**Buyers' Great New Highway at Castle Bromwich.*

The plan of the Engineering and Hardware Section of the 1935 British Industries Fair at Castle Bromwich, Birmingham, has been approved, subject only to endorsement by the council of the Chamber of Commerce, by the Management Committee in Birmingham.

An important feature of the plan is a new road to be specially built for traffic at Castle Bromwich. This road will link up with the Chester trunk road and Aerodrome Road, and the traffic will be one-way.

The road will be thirty feet wide and more than a third of a mile long. It will enable traffic to move quickly and smoothly to Castle Bromwich.

This road will be something of an exhibit itself. It will illustrate the methods of modern road-making as it will be laid in sections in tarmacadam, concrete, rubber, wood, sett, brick, and iron. The materials, so far as possible, will be bought from exhibitors.

The plan also indicates the enormous extension of space for outdoor exhibits at Castle Bromwich. The Section, which opens in May, will be divided into these four sub-sections:—

A. Indoor: Hardware.

Outdoor: Farm and garden.

B. Indoor: Building and heating.

Outdoor: Public works, quarry and roads
(Materials).

C. Indoor: Electricity.

Outdoor: Public works, quarry and roads
(Accessories).

D. Indoor: Engineering.

Outdoor: Public works, quarry and roads
(Machinery).

The applications for inside space have been so great that very little is left.

FINANCE.

NEW COMPANIES.

Rototype Holding, Ltd.

This private company has been formed with a capital of £100,000 (90,000 £1 ten per cent. Cumulative Participating Preference and 200,000 ls. Ordinary) with the object of carrying on the business of manufacturers of type-setting, composing and casting machines. Directors: Henry B. Potter, John D. Fyvie and William R. Sharp. Registered Office: 11, Waterloo Place, Pall Mall, S.W. 1.

Belvedere Chemical, Ltd.

This is a private concern with a capital of £50,005 (25,000 "A" Ord. and 25,000 "B" Ord. shares of £1 each and 100 "C" of 1s. each). The office of the company, which has been registered as manufacturers of and dealers in chemicals, etc., is at Westinghouse Road, Trafford Park, Manchester.

Tan Sad Holdings, Ltd.

This concern has been registered as a public company with a capital of £100 in 1s. shares to acquire not less than 90 per cent. of the issued share capital of Tan Sad, manufacturers of perambulators, wheel toys, etc. The directors are: Clinton F. Chance, Guy M. Chantrey, Henry B. Headley, Leonard Hunt, Percival Shott and Albert V. Terry.

Tan Sad Allwin Corporation, Ltd.

This corporation has been registered as a private company with a capital of £70,025 divided into 70,000 £1 eight per cent. Cumulative Preference and 500 ls. Ordinary, to acquire not less than 90 per cent. of the issued share capital of (1) Tan Sad and (2) Richard Son & Allwin; to adopt agreements with Tan Sad Holdings and with F. T. Garratt, and to carry on the business of manufacturers of all kinds of perambulators, tubular furniture, mechanical appliances, etc. The directors are: Guy M. Chantrey (chairman), Percival Shott and Albert V. Terry, Capt. Frederic T. Garratt and H. B. T. Wilde.

The solicitors are: Pinsent and Co., 6, Bennetts Hill, Birmingham.

The Atlas Sprinkler Co., Ltd.

The formation of a new subsidiary, the Atlas Sprinkler Co., Ltd., is announced by Crompton Parkinson, Ltd., the electrical engineers.

The directors are: Mr. E. C. Holyoide (chairman), Mr. F. Parkinson and Mr. W. R. Chisholme.

It has been stated that the new company is to carry on the business of the manufacture and installation of automatic sprinklers and other fire protection apparatus which would fully comply with the requirements of the Fire Offices' Committee.

AMALGAMATION.

Anglo-Indian Rice Combine.

It is understood that an arrangement has been made whereby various interests have combined to carry on business in rice and rice products as from 1st November, 1934, under the name of the International Rice Co., Ltd. The registered offices are at Winchester House, Old Broad Street, E.C. 2.

The new company was registered as a private company on 13th October, with a nominal capital of £50,000 in £1 shares (2,000 "A" and 48,000 "B").

The directors are:

G. St. Q. Beasley, director of Ralli Brothers, merchants of London and Manchester.

D. D. Bryson, partner of Blackwood Bryson & Co., East India merchants, of London.

F. S. Little, partner of Blackwood Blackwood & Co., Rangoon.

A. Luthke, of Shaw Luthke & Co., East India merchants, of London.

J. L. Milne, partner of R. G. Shaw & Co., East India merchants, of London and Dundee.

F. H. L. Perl, partner of D. Couper-Johnston & Co., Bangkok.

Sir Strati Ralli, director of Ralli Brothers, London.

R. M. H. Savage, director of Shaw Luthke & Co., London.

INCREASES IN CAPITAL.

	£
The Marley Tile (Holding) Company, Ltd.	799,000
British Vegetable Parchment Mills, Ltd.	50,000
V. P. Produce, Ltd. (Preservers of perishable commodities.)	249,500
Eno Proprietaries, Ltd.	1,999,900
Walter Hicks & Company, Ltd. (Brewers.)	50,000
Wall Paper Manufacturers, Ltd.	800,000
Murex, Ltd. (Tungsten manufacturers)	45,000
The Rubber Regenerating Company, Ltd.	70,000
The Trussed Concrete Steel Company, Ltd.	60,000

CONTRACTS SECURED.

Diesel Engines in Demand.

Large orders for stationary and marine Atomic Diesel engines have been received by Petters of Yeovil, necessitating several of the departments working overtime. These include stationary engines of 160, 144 and 224 b.h.p. for the Sudan, Rhodesia and the Transvaal and two each of the 108 and 270 b.h.p. sizes with alternators for Nyasaland and West Africa. All the foregoing engines are to be used in connection with gold mining plant. Australia has ordered two engines of 540 b.h.p. each for town lighting purposes. Two of 160 b.h.p. are being despatched to a Bombay cotton mill and a 50 b.h.p. to Calcutta for use in a tea garden. Iraq has ordered a 270 b.h.p. for a town lighting installation and a 60 b.h.p. engine will be sent to a French mining company.

Teleprinters for New Zealand and Spain.

An order for 70 teleprinters at a cost of over £10,000 has been placed by the New Zealand Government with the Croydon firm of Creed & Co., Ltd. The machines are intended for the New Zealand Posts and Telegraph Department, Wellington.

This firm has also secured an order for the supply of teletype machines to the Spanish Ministry of Communications for the Spanish Telegraph Department, at a cost of 375,000 pesetas.

Standard Telephone Order.

The Chinese Government has placed an order with Standard Telephones & Cables, Ltd., for a toll line system, which, in linking up nine provinces, will form the backbone of a national telephone network.

Danish Order for Gas Plant.

The Copenhagen Lighting Department reports that an order has recently been placed with W. C. Holmes & Co., Ltd., of Huddersfield, for the supply and erection of Gas Dehydration and Benzole Extraction and Refining Plants at their Eastern and Vulby Gas Works, at a cost of £18,610.

Escalators for South Africa.

Waygood Otis Ltd. of London have received a contract from O. K. Bazaars (1929) Ltd. of South Africa, for the installation of six escalators in their store at Johannesburg. The contract is worth over £20,000.

Pumps for Manila.

Mirrlees Watson Company Ltd. of Glasgow have received an order from Manila for four Diesel engine driven Rotary Displacement Pumps for pumping molasses or fuel oil. Two will be installed in Iloilo and two in Manila. The engines are 3 cylinder $8\frac{1}{2}'' \times 12''$ developing 100 H.P. at 600 r.p.m. The pumps are 6 x 9 of the Rotary Displacement type.

Pumping Sets.

Messrs. Worthington-Simpson Ltd., Newark-on-Trent, have recently secured the following contracts:—

Four 12" Unchokable Sewage Centrifugal Pumping Sets and three Electric Driven Vertical Triplex Plunger Pumping Sets, for the Nottingham Sewage Plant. The approximate value of the contract is £3,800.

The provision, delivery and erection of the main Pumping machinery to the value of £66,000, for the West Middlesex Drainage Scheme.

A group of miscellaneous pumping sets and Vapour Condensers and Exchanges for Messrs.

M. W. Hellogg & Co., to the approximate value of £5,500.

Two 4,000 G. P. M. Cooling Towers with patent "Airscrew" Fans and Motors, valued at £7,700, for Messrs. Stewarts & Lloyds S. A. Ltd.

Two 28' x 40' Cooling Towers with "Airscrew" Fans, etc., and group of pumps, valued at £7,800 for the Anglo-Persian Oil Co.

Hydrogeneration Plant for Mexico.

Casas y Nicole, Mexico, have placed orders with Technical Research Works Ltd., London, for an installation for the hydrogeneration of oils and for an electrolytic hydrogen plant at a total value of £10,300.

Electrical Contracts for India.

The English Electric Co., Ltd., Calcutta, has received from the Indian Stores Department an order for three turbo-alternator sets of 750 K.W. each, complete with condensing plant, and also rotary converter equipment and switchgear, for the Eastern Bengal Railway's power houses at Kanchrapara and Saidpur. The value of the contract is approximately £17,500.

They have also received an order for equipment for the Great Eastern Hotel, Calcutta, comprising two 70 K. W. mercury arc rectifiers with switchgear, transformers and motors.

Messrs. Bird & Co., Calcutta, have placed with them an order for an 825 K. W. alternator for installation at the Kumardhubi Engineering Works Ltd.'s power house.

Steelplates for the Argentine.

The Buenos Aires firm of Hansen Buccini S.A. have placed an order for steelplates to the value of £8,000, required for the construction of a 4,000 ton steamer for the Argentine State Oilfields, with Dorman Long & Co., Ltd., London.

Steel pipes for New Zealand.

An order has been placed by the New Zealand Posts and Telegraph Department, Wellington, with the British Mannesmann Tube Co., Ltd., Newport, for three miles of steel pipes.

Egyptian Government Contracts.

John Dickinson & Co., Ltd., have secured a contract for the supply of paper, printing and binding materials required by the Egyptian Government Press. The value of the contract is approximately £18,198.

It is understood that John Cochrane & Sons, Ltd., engineers and contractors of Victoria Street, S.W. 1, have been awarded the contract for the reconstruction of the Assiut Barrage. The company's tender amounted to £F.1,077,462.

Orders for United Kingdom Aeroplanes from Chile.

The Chilean Government has placed orders for aeroplanes exceeding £100,000 in value with United Kingdom firms. The machines are to be of the most modern type and are to be used chiefly for instructional purposes. They include 17 "Avro" training planes, 3 "Avro" aeroplanes and 2 "Fairey" flying machines.

Aeroplanes for New Zealand.

An order for 6 "Moth" aeroplanes has been placed with the De Havilland Aircraft Co., Ltd., by the New Zealand Government. They are to be fitted with "Gypsy Major" engines.

Argentine Coal Contract.

It is understood that Gueret Llewellyn & Merrett, Ltd., have secured the Buenos Aires Electricity Works contract for 500,000 tons of sized coals for delivery over the whole of 1935 in the face of intense German and Polish competition.

United Kingdom Aircraft for Australia.

United Kingdom civil aircraft have attained a position of supremacy in Australia, where extensive developments are taking place on some of the principal air routes. New England Airways, one of the leading companies, has placed an order for 10 Monospar machines with General Aircraft, Ltd.

An interesting feature of this important contract is that it has been obtained in keen competition with the United States, Holland, France and Germany.

The machines are to be delivered early in the New Year in connection with the extension by New England Airways to Melbourne of the line now operating between Brisbane and Sydney.

Polish Order.

Swan Hunter and Wigham Richardson, Ltd., have received confirmation of an order from a Polish company for two cargo vessels of 2,000 tons each.

THE UNITED KINGDOM IRON AND STEEL INDUSTRY.

During recent weeks conditions in the iron and steel industry have shown a definite improvement, thus indicating that the previous slight recession was to be attributed to the operation of normal seasonal factors. While the bulk of the business at present being transacted continues to be for domestic consumers, there have at the same time been welcome indications of an expansion in export trade, which in view of the greater number of enquiries received from certain overseas markets seems likely to continue.

The pig iron situation remains satisfactory on the whole. As many important consumers have covered their requirements for some time ahead, new business is principally for comparatively small tonnages, but the total volume of demand is fairly substantial and producers are well placed as regards orders in hand.

At the end of September there were 98 furnaces in blast compared with 97 at the end of August, one furnace having been blown in during the month.

The total output of pig iron in September amounted to 500,300 tons against 503,300 tons in the preceding month, and 359,700 tons in September, 1933: thus pig iron production in September this year showed an increase of some 140,000 tons, or roughly 40 per cent., when compared with the corresponding figure for September last year.

In the steel industry the upward trend has been resumed and the total production of steel ingots and castings in September was 734,700 tons against 667,000 tons in August and 669,000 tons in September last year.

During recent weeks buying of semi-finished material has been more active than for some time past. Competi-

tion from Continental producers of semi-finished material has shown some falling off, but still represents a serious problem in the domestic market.

The position as regards finished steel products is also more favourable and production in most departments is on a good scale. Few individual orders for large tonnages have been placed recently but the total amount of business is fairly substantial. While domestic demand continues to be the dominating feature, a fair number of export contracts have been booked recently and more enquiries are in circulation.

The improvement in the position of the export trade is reflected in the fact that during recent months iron and steel exports from the United Kingdom have been at a level approaching an average of 200,000 tons per month, whereas the average monthly exports in 1933 were 160,000 tons. The actual figures for the past three months are: 198,000 tons in September, 193,400 tons in August and 197,100 tons in July. The maintenance of this substantially higher level of exports during recent months is a particularly noteworthy feature, having regard to the abnormally difficult conditions obtaining in international trade at the present time.

Iron and steel imports into the United Kingdom during September showed a decline, amounting to 89,500 tons compared with 102,200 tons in August and 126,400 tons in July. They were still, however, higher than in September, 1933, when they amounted to 80,300 tons.

With reference to the position in the principal iron and steel producing areas in the United Kingdom output in Scotland is being well maintained and it is anticipated that present conditions will continue. There are encouraging signs of greater activity in some of the ship-building yards and additional orders are being placed, although the position still leaves much to be desired. Demand from the engineering works and structural establishments is better than for some time past.

On the North-East Coast the prospects are considered to be encouraging. Domestic demand in general is good and is likely to be maintained. At the same time there has been an expansion in export trade and Australia and China have been buying larger tonnages of steel. Some business has also been transacted with China and Russia and the improved financial situation in the Argentine is reflected in increased shipments of steel to that country.

The steel works in the Sheffield area continue to be well occupied and the demand for billets is particularly active. Good business is also reported in steel strip and bright drawn bars, and wire rods are in active demand.

In South Wales favourable business is being maintained in sheet and tinplate bars, and local steel producers are busy. The tinplate trade is fairly quiet but the market is settling down to the working of the international tinplate agreement and it is hoped that business will improve in the future. The position in the heavy steel market is fairly good and there has been some expansion in overseas demand.

MACHINE TOOLS.

Automatic Rack Cutting Machine.

J. Parkinson & Son, Canal Iron Works, Shipley, Yorks, have recently constructed an automatic machine for cutting racks with straight or inclined teeth. Racks can be cut up to 30 inches long at one setting, up to 4 inches wide, up to 3 diametral pitch and 1 inch circular pitch. Circular formed rotating cutters are used for cutting the teeth, the arbor accommodating cutters up to a total width of 3 inches, so that when cutting fine pitches several teeth may be cut at each traverse. The cutter spindle is driven by a 3-h.p. motor running at 1,450 r.p.m., through hardened double-helical gears. The spindle is mounted in the slide on the top of the machine column, and reciprocates transversely over the table. Two spindle speeds are provided, and the maximum and minimum diameters of cutters used are $4\frac{1}{2}$ inches and $3\frac{3}{4}$ inches; the cutter arbor being $1\frac{1}{2}$ inches diameter.

A 1-h.p. motor running at 960 r.p.m. operates the automatic feed traverse and return movements and the indexing mechanism. The latter ceases to function when the desired length of rack has been cut. The feed is automatically stopped by a simple device should the indexing mechanism fail to operate. The T-slotted work table has longitudinal adjustment by screw and hand wheels. It may be swivelled 15 degrees on each side of the centre line, so that in addition to cutting straight teeth to gear with spur pinions, it may be used for cutting teeth inclined either right-hand or left-hand up to 15 degrees, to gear with worms, or with skew or spiral teeth. The knee bracket has a vertical adjustment by

screw, and the depth of cut is shown on a large micrometer dial. The vice supplied with the machine will hold racks up to 3 inches wide, and the equipment also includes a motor-driven coolant pump.

The indexing change gears provide for the cutting of diametral pitches from 14 to 3, and for circular pitches from $\frac{1}{16}$ inch to 1 inch. Gears are also supplied for indexing up to $1\frac{1}{2}$ diametral pitch and 2 inches circular pitch, for use when cutting several teeth with multiple cutters at each indexing. When the machine is required for cutting module pitches, it is equipped with a metric pitch screw and suitable change gears.

SHIPBUILDING.

Returns issued by Lloyd's Register of Shipping show that at the end of September last 604,296 tons of merchant shipping were under construction in Great Britain and Ireland, an increase of 17,154 tons in the work in hand as compared with the figures for the previous quarter. The present total is 300,534 tons greater than the tonnage which was being built at the end of September, 1933. The figures for the three quarters referred to are:—

<i>30th September, 1933.</i>		<i>30th June, 1934.</i>		<i>30th September, 1934.</i>	
<i>No. of vessels.</i>	<i>Gross tonnage.</i>	<i>No. of vessels.</i>	<i>Gross tonnage.</i>	<i>No. of vessels.</i>	<i>Gross tonnage.</i>
87	303,762	131	587,142	129	604,296

Included in the total at the end of September, 1934, are 13 vessels (all steamers) of 50,068 tons on which work has been suspended. While the increase in tonnage under construction during the last three months has been small, the quarterly total maintains the upward tendency which has been noted since the beginning of 1933.

Nationality of Vessels under Construction.

<i>Country for which intended.</i>	<i>No.</i>	<i>Gross tonnage.</i>	<i>Country for which intended.</i>	<i>No.</i>	<i>Gross tonnage.</i>
Great Britain & Ireland.	103	522,203	Mexico	2	3,456
British Dominions.	7	29,572	Portugal	2	400
China	8	10,400	Country not stated, or for sale.	11	38,130
France	1	135			

Total . 129 604,296

The tonnage which is now under construction abroad (excluding Russia, of which no figures are available) is 707,091 tons—about 78,000 tons more than the work which was in hand at the end of June, 1934. It is the highest quarterly total recorded since June, 1932, but it includes 3,035 tons of steamers and 35,778 tons of motor ships on which work has been suspended. The world total of 1,311,387 tons shows an increase of 95,000 tons over the figures at the end of June last and is the highest recorded since December, 1931.

New construction commenced in Great Britain and Ireland during the last three months amounted to 76,911 tons, a decrease of 69,742 tons compared with the figure for the June quarter. Launchings in the quarter ended September, 1934, amounted to 183,422 tons in Great Britain and Ireland, an increase of 147,468 tons compared with the June quarter. Similar figures for abroad for the quarter ended 30th September, 1934, are 181,177 tons commenced and 123,375 tons launched, showing an increase compared with the previous quarter of 55,265 in the tonnage commenced and 9,937 in the tonnage launched.

THE AUTOMOBILE AND ALLIED TRADES.

THE MOTOR SHOW.

By a special correspondent.

Although commercial motor vehicles were not included in the exhibition, the Twenty-eighth International Motor Show, which was held at Olympia in London, was the world's largest exhibition of the products of one industry only. There were nearly seven miles of stands, displaying goods valued at £1,000,000, and among the 500 exhibitors were manufacturers of fifty-four different makes of cars, 30 of these being British and the rest foreign. Magnificent though many of the foreign cars were—one of them had the distinction of being the most expensive vehicle in the show—it is the United Kingdom section which will form the subject of this article.

It can be asserted definitely that the common denominator of all cars exhibited was better value for money

than ever before, but when motor-car production has reached as high a general level of efficiency as the present, no revolutionary developments can be anticipated. An examination of details nevertheless revealed a number of novelties and a very steady progress during the past twelve months. While refusing to follow too closely the modern foreign trend towards a rather grotesque "aerodynamic" body, the new United King lion model on the whole presented a very pleasing combination of artistic lines and wind-resisting smoothness. On the mechanical side easy change gear-boxes were practically universal, even the cheapest car was well sprung, and independent front-wheel-suspension has become more general. Increased sales at home and abroad have enabled manufacturers to make a standard of what was last year's *de jure*, while a scientific utilisation of every inch of space and the introduction of innumerable gadgets and novelties such as pneumatic cushions, noiseless tyres, air purifiers, etc., has made motor driving comfortable beyond the dreams of a few years ago.

The most apparent difference between this year's show and that of last year was an increase in the average size of the exhibited cars. As the tax on cars in the United Kingdom is based on the horse-power of their engines, the tendency has been to build smaller and smaller engines. Marvellously efficient though these undeservedly popular "baby" cars are in view of their size and price, the reduction of 25 per cent. in the motor-car tax which comes into force in the United Kingdom on the first of January has led manufacturers to anticipate a greater demand for roomier and more powerful vehicles. The result is that where previously the seven to eight horse-power cars were the general favourites, the nine to eleven horse-power vehicles are now making a bid to oust them. In this, the "small four" class, fifteen different makes were to be seen at the show, fourteen of them being of United Kingdom make. The new editions of such well-known baby cars as the *Austin Seven* and *Morris Minor* are sturdier and roomier vehicles than before, the former quite different in appearance owing to a new design of bonnet and radiator, the latter having been rebuilt on a big car wheelbase and provided with a more powerful engine, which is nevertheless still rated at eight horse-power. Among the fast sports cars belonging to this class are new and improved models of the well-known *M. G.*

Midgets and the *Singer Nine*, which have of late scored so many triumphs on the racing tracks.

The 470 models exhibited ranged in power from seven to fifty-four horse-power, and the effect of the tax reduction was demonstrated in the number of cars above twenty horse-power on view, namely 237 against last year's number of only 156. With prices ranging from £118 to £2,850—the latter figure is for a Rolls Royce, that steady favourite of the well-to-do all the world over—there is a United Kingdom car for every kind of car owner. All the well-known firms, such as Morris, Austin, Standard, Wolseley, Vauxhall, Hillman and Humber, were well represented, and buyers often found it difficult to make their choice among so much excellency. When, during the past year, United Kingdom motor-car manufacturers found trade so brisk that they could add 100,000 men to their pay roll, they reaped a just reward for their courage in refusing, during the lean years of shrinking sales at home and abroad, to lower the quality of their goods. The further rise in orders which has resulted from the Olympia show proves that the whole world recognises that, for soundness of engineering and honesty of craftsmanship, for excellency of material and for perfect reliability, the United Kingdom motor-cars cannot be beaten.

TEXTILES.

COTTON.

Following the Royton agreement in regard to prices and conditions of sale by the spinners of coarse counts of yarn similar movements have been afoot in other sections. Egyptian spinners have declared in favour of the principle of compulsory price fixing and a legal pact seems probable whilst a similar scheme is under consideration amongst the ring spinners. A general system of price control throughout the whole of the Lancashire spinning industry would therefore appear to be in sight. In the manufacturing section a new attempt is being made to restore uniformity of wages and conditions and it is reported that some progress has been made.

Other matters of special interest to the cotton industry are the report of the Australian Tariff Board, the German debt proposals and the spinning trade reorganisation

schemes which involves the scrapping of ten million spindles (American and Egyptian) at an estimated cost of £2,000,000.

The details have been approved by the General Committee of the Federation of Master Cotton Spinners Associations and have now been submitted to all members of the trade.

The general inquiry for piece goods for export has been of fair extent during the past week or two, but the price has frequently prevented orders materialising. Turnover with India has not improved, but the outlook for China trade is somewhat better owing to the rise in the price of silver and the demand for fancies for Hong Kong has been well maintained. Trade with Egypt and the Near East is quiet and only spasmodic orders have been received from South American markets and the Dominions.

The exports of cotton yarn in September were less than in August or September last year largely owing to the decreased exports to Germany, but piece goods exports were the largest for any month since January this year and amounted to 177,742,000 square yards compared with 168,743,000 square yards in August and 163,008,000 square yards in September, 1933. The exports to India are noteworthy being 60,515,000 square yards compared with 33,793,000 square yards in the corresponding month of 1933.

For the first nine months of the year the exports of cotton yarns totalled 98,586,100 lbs. compared with 99,117,900 lbs. in the corresponding period of 1933, and 109,077,700 lbs. in that of 1932. The exports of piece goods were 1,484,915,000 square yards, compared with 1,549,622,000 square yards and 1,704,555,000 square yards respectively, the largest contraction being in bleached goods. The following table shows nine months exports to some of the principal markets:—

<i>Nine months, January—September, (1000's omitted).</i>				
	<i>1934.</i>	<i>1933.</i>	<i>1932.</i>	
	<i>Square yds.</i>	<i>Square yds.</i>	<i>Square yds.</i>	
British India . . .	428,350	377,759	464,678	
Australia . . .	110,988	115,369	129,518	
South Africa . . .	90,678	81,095	31,737	
Canada . . .	48,575	32,590	21,575	
British West Africa .	39,869	75,549	105,633	

<i>Nine months, January—September, (1000's omitted).</i>			
	<i>1934.</i>	<i>1933.</i>	<i>1932.</i>
	<i>Square yds.</i>	<i>Square yds.</i>	<i>Square yds.</i>
British Malaya . . .	18,582	18,405	31,534
Hong Kong . . .	4,594	17,765	49,387
Argentina . . .	121,678	115,112	90,162
Switzerland . . .	46,357	50,936	31,310
Denmark . . .	37,011	36,186	26,157
Egypt . . .	34,048	50,146	64,649
Colombia . . .	31,086	49,473	27,553
Netherlands . . .	15,259	16,131	28,067
Morocco . . .	13,239	34,588	40,220
Chile . . .	13,461	4,615	2,076
Uruguay . . .	13,118	11,404	7,959
China . . .	12,739	27,915	65,658
Iraq . . .	10,090	12,111	34,957
Dutch East Indies .	9,926	13,988	37,322

WOOL.

Wool values reached their lowest level of the year towards the end of September, but the fall has been checked by good support at the auctions in London and Australia. Combers and spinners are feeling the lack of orders from Germany, but they are still well employed.

The export of wool tops during the first nine months of this year amounted to 30,675,000 lbs. compared with 33,735,000 lbs. during the corresponding period of 1933 and 28,313,000 lbs. in 1932. The exports to Germany falling to 6,474,000 lbs. (January-September, 1934) from 9,010,000 lbs. (1933). The yarns exported were as follows:—

<i>Nine months, January—September.</i>			
	<i>1934.</i>	<i>1933.</i>	<i>1932.</i>
Woollen (carded) lbs. .	6,622,500	5,477,200	4,412,500
Worsted (combed) lbs. .	25,668,700	25,736,000	23,568,600

Increased quantities of woollen yarns have been sent to Irish Free State, Canada, Germany and China and more worsted yarns to Irish Free State, Sweden, Norway, Belgium and China whilst decreased quantities of worsted yarns were exported to Hong Kong, Canada, Denmark, Germany, the Netherlands and Japan.

South Africa, Canada, the Irish Free State and the Argentine were the best markets for woollen piece goods

during the nine months—January-September this year, and the total exported to all markets was 53,289,000 square yards compared with 45,942,000 square yards during the corresponding period of 1933 and 40,984,000 square yards in 1932. The equivalent figures for woisted piece goods are 26,158,000 square yards (1934); 24,993,000 square yards (1933) and 21,959,000 (1932). Canada and the Argentine head the list with considerable increases over last year. Increased quantities were also exported to South Africa, Australia, New Zealand, United States of America and Greece.

India, Hong Kong, Norway, the Netherlands, France, Turkey, Egypt, China, Japan, Brazil and Uruguay show decreases. Considerably more flannels and delaines have also been exported up to the end of September this year compared with the two previous years. The figures are 4,136,000 square yards (1934); 2,794,000 square yards (1933) and 2,646,000 square yards (1932).

LINEN.

The first markets for Northern Ireland flax have been held. The official average price for the chief markets was 8s. 4d. per stone (£60 $\frac{2}{3}$ per ton). The yield is reported to be smaller than last year's average.

Activity is more evident in the yarn market though business is retarded by the lack of a firm price basis in the raw material.

The value of linen goods exported during September amounted to £498,141, showing a decrease in comparison with the value, £574,010, of exports in September, 1933.

The value of piece goods exported also decreased, the figures being £279,228 and £341,868 for September, 1934 and 1933, respectively. The month was the poorest this year.

The principal decreases in exports of piece goods were in respect of foreign markets, trade with Empire countries being generally satisfactory. The value of piece goods exported to the U.S.A. decreased from £143,103 in September, 1933, to £79,630 in September, 1934, and to Brazil from £36,754 to £12,931. Exports to Australia in these goods increased in value from £34,571 to £50,454, to South Africa from £10,735 to £13,918, and to New Zealand from £6,978 to £12,862 for the months of September, 1933 and 1934 respectively.

Canada, however, showed a decrease from £17,760 to £13,901 in respect of the same months.

The value of damask table linens exported during the month amounted to £71,551 as compared with £76,192 in September, 1933. Exports to the United States fell by about £16,000, while exports to United Kingdom countries improved.

Exports of handkerchiefs increased in value, the September exports during the years 1934, 1933 and 1932 being respectively £40,015, £37,490 and £35,078.

The value of linen manufactures imported into the United Kingdom for the first nine months of 1934, 1933 and 1932 were £179,285, £194,492 and £283,659, while the values of exports from the United Kingdom for the same periods were respectively £4,490,194, £4,159,320 and £3,844,546.

The total quantities of piece goods exported during these periods were respectively 60,846,000; 58,170,000 and 49,039,000 square yards.

PAPER.

Conditions in the paper industry during August and the first half of September, although rather quiet, were better than the usual for that period of the year when a slackening of business is expected owing to holidays. There has since been an improvement and many mills are now working to full capacity.

Particulars of the exports of paper, cardboard, etc., for the first nine months of this year, with comparative figures for the corresponding period of 1933 and 1932, are as follows:—

	Quantity.	Value.
	<i>cwts.</i>	£
1934	2,709,913	4,561,491
1933	2,757,069	4,441,828
1932	2,908,989	4,836,190

The decline in volume in 1934 as compared with the previous two years is accounted for by diminished

exports of newsprint in rolls, as is shown by the following figures relating to this item:—

<i>Newsprint in rolls.</i>	<i>Exports from the United Kingdom.</i>		
	<i>1934.</i>	<i>1933.</i>	<i>1932.</i>
	<i>cwt.s.</i>	<i>cwt.s.</i>	<i>cwt.s.</i>
To Australia	758,892	940,508	961,603
New Zealand	24,751	71,623	122,463
Other British Countries	164,454	167,406	139,845
Foreign Countries	12,123	21,300	70,910
	<hr/>	<hr/>	<hr/>
	960,220	1,200,846	1,294,821
	<hr/>	<hr/>	<hr/>

The separate values of the exports during the first nine months of the year of the principal classes of paper and stationery are given in the following statement:—

<i>Section.</i>	<i>Value of Exports.</i>		<i>Increas.e.</i>	<i>Decrease.</i>	<i>Inc. or Dec. per cent. over 1933.</i>	
	<i>1934.</i>	<i>1933.</i>			<i>Inc.</i>	<i>Dec.</i>
	£	£	£	£		
Newsprint in rolls	501,525	686,656	—	185,131	—	27·0
Other printing paper	1,022,676	643,971	78,705	—	8·3	—
Writing paper in large sheets.	303,100	298,260	64,831	—	21·7	—
Wrapping	345,620	275,173	70,456	—	29·0	—
Cardboard and mill-board.	189,092	150,430	38,662	—	25·6	—
Stationery	656,327	703,780	—	47,462	—	6·7
All other sorts	1,483,142	1,383,540	99,602	—	7·9	—
	<hr/>	<hr/>	<hr/>	<hr/>	<hr/>	<hr/>
Total	4,561,491	4,441,828	119,663	—	2·6	—
	<hr/>	<hr/>	<hr/>	<hr/>	<hr/>	<hr/>

It is announced that Courtaulds Limited have come to an arrangement with the Cellophane Cie of France for the erection of a factory in the United Kingdom to manufacture transparent wrapping to be sold under the trade marks "Cellophane" and "Viscagelle."

POTTERY AND GLASSWARE.

During the past few weeks there has been a steady improvement in the demand for pottery, with a consequent reduction in the number of workers unemployed.

Following are details of the exports of pottery for the first nine months of 1934, together with comparative figures for the corresponding period of 1933:—

<i>Class.</i>	<i>Value of Exports.</i>		<i>Increase.</i>	<i>Increase per cent. over 1933.</i>
	<i>1934.</i>	<i>1933.</i>		
	£	£	£	
Tiles (all classes) .	146,988	142,967	4,021	2·8
Sanitary ware .	485,819	432,373	53,446	12·4
Chinaware . . .	192,629	152,457	40,172	26·3
Electrical porcelain	85,854	44,696	41,158	92·1
Earthenware of all other descriptions	1,177,275	1,053,461	123,814	11·8
Refractory goods not otherwise specified . .	216,700	184,545	32,155	17·4
All other descriptions . . .	47,557	56,208	8,651 (Dec.)	15·4 (Dec.)
Total .	2,352,822	2,066,707	286,115	13·8

Quietly improving conditions are reported from the various sections of the glass industry.

Following are details of the exports of glass and glassware for the first nine months of 1934, together with comparative figures for the corresponding period of 1933:—

<i>Class.</i>	<i>Value of Exports.</i>		<i>Increase.</i>	<i>Increase per cent. over 1933.</i>
	<i>1934.</i>	<i>1933.</i>		
	£	£	£	
Scientific glassware .	70,567	53,270	17,297	32·5
Domestic and fancy .	148,587	120,232	28,355	23·6
Plate and sheet . .	576,099	482,852	93,247	19·3
Bottles and jars . .	167,431	195,571	28,140 (Dec.)	14·4 (Dec.)
All other kinds . .	82,072	70,841	11,231	15·9
Total . .	1,044,756	922,766	121,990	13·2

THE RE-ESTABLISHMENT OF THE UNITED KINGDOM CLOCK INDUSTRY.

(By A. Gordon Smith, Chairman of The British Clock Manufacturers' Association.)

There are few industries in Great Britain which can show such a phenomenal advance in recent years as can that of British clockmaking.

Until some three years ago the manufacture of domestic clocks had been almost non-existent in the United Kingdom for something over a century. Prior to 1931 there was only one factory producing ordinary domestic types of clock movements, although several concerns were manufacturing clock systems and chronometers. In this branch of the clock industry in which quality rather than price is the predominant factor, United Kingdom firms were highly successful, the majority of large orders for clock installations in buildings and ships being secured by them.

The McKenna Duties.

During 1930 and 1931 certain persons not then closely connected with clock manufacture observed that large quantities of clocks and clock movements (averaging approximately 6,000,000) were being imported into the United Kingdom every year. Being aware that under the McKenna Duties a tariff of $33\frac{1}{3}$ per cent. was imposed on imported clocks, they felt that notwithstanding the fact that on the Continent—notably in Germany—clocks were being manufactured on a vast scale, a number of types of domestic clocks could be successfully made in the United Kingdom and sold in competition with the imported articles.

Almost simultaneously manufacture was commenced at Cricklewood, Swindon and Enfield, and as time progressed factories in other places were started.

Clocks from these factories soon made their appearance on the market, and things looked very promising for the new industry.

Whilst it was not anticipated that foreign manufacturers, who had so long considered the British market their own, would merely look on and take no steps to meet the new competition, it was never contemplated that prices of foreign movements would be cut by one-half in order to destroy, if possible, the newly started home industry. Such intense competition from the established foreign factories was a most serious menace, and recognising it as such United Kingdom manufacturers determined to fight for their, as yet, frail industry. Whether their efforts have been successful or not may be best judged by figures:—

The Rapid Growth in Output.

The estimated total number of clocks and chronometers manufactured in the United Kingdom during

1931 was 65,000, and in 1933 the production is estimated at between 900,000 and 1,000,000. It is confidently expected that 1934 will show an even larger increase in output.

It will be generally agreed that creditable progress has been made, especially when it is borne in mind that those countries which have established successful clock manufacturing industries have done so with the assistance of high protective duties. In this connection United Kingdom manufacturers confidently expected that the measure of protection afforded by import duties would not be weakened. In this, however, they were disappointed, as the duties were, early in 1932, substantially reduced. This reduction, it must be confessed, dealt a blow at the new industry, but the manufacturers were determined to win through and indeed feel confident to-day of being able to maintain and strengthen their position in the face of all competition.

New Factories and New Clocks.

Many factors have contributed to the success so far achieved. In the first place the new factories decided to manufacture the better class of clocks, articles of which they could be proud and which would command attention because of their quality and workmanship. Further, the policy of concentrating on the better class of clocks meant that a relatively large turnover could be obtained with relatively small production. This will be appreciated when it is pointed out that although foreign manufacturers are still exporting to the United Kingdom clocks and/or movements at the rate of approximately 6,000,000 per annum, the average value of the imported article is only 2s. 3d., the actual total value for 1933 being £656,938. This compares with a British output of between 900,000 to 1,000,000 clocks in the same year at an estimated value of over £1,000,000. It will thus be seen that the home industry has made much greater progress than might have been thought from consideration of the quantitative figures of production alone.

The United Kingdom manufacturers, however, are not content to take second place even in quantity of production, and it may confidently be expected that at a very early date a full range of popularly priced types of domestic clocks manufactured in Great Britain will appear. Further, the newly formed industry is not con-

sidering the home market as its only goal, but is already approaching markets overseas, and it is hoped that eventually United Kingdom made clocks will be found in every market where clocks are bought.

The Domestic Electric Clock.

While the ordinary mechanical type of domestic clock has enjoyed a long popularity, there has in the past two or three years been development of a type of movement which is new, *viz.*, the electric movement applied to domestic clocks. It has long been known that a small synchronous electric motor operating on an accurately controlled alternating current supply would, if arranged with a suitable gearing, a pair of hands and a dial, make a very efficient clock, far more reliable than an ordinary clock as a time-keeper and less bothersome, as once having been set it requires neither winding nor regulating. During 1932, again almost simultaneously, several factories in Great Britain commenced the production of such clocks. Rapid progress was made, principally because the electrically-minded realised that these clocks would do all that was claimed for them. The use of alternating current, both in the United Kingdom and overseas, is steadily increasing, and for this reason alone the development of this branch of the industry is bound to continue.

In the manufacture of the mechanical type of clock the home industry must always be faced with the intense competition of the older foreign factories, whereas with the synchronous electric type of movement our manufacturers started before or at least level with most other countries producing this type of movement. The United Kingdom therefore stands an excellent chance of being the first, apart from the U.S.A., finally to establish the manufacture of these new clocks. Significant of this progress is the fact that 50 per cent. of all clocks exported from the United Kingdom during 1933 were of the synchronous electric type.

The Future of the Industry.

Viewing the future, one has every reason to be optimistic, but at the same time the difficulties to be overcome, particularly in overseas markets, must not be overlooked. The future is not in the manufacturers' hands alone, but also rests with the wholesalers and

retailers. The industry has already shown by its rapid progress in the face of many obstacles that it is worthy of the valuable assistance that can be rendered by members of the trade throughout the world. All that the manufacturers ask is that the trade should give them a real chance of showing what they can do and draw the attention of potential buyers to the excellence of their products. British clocks are good clocks, made not only to look attractive but fitted with movements which will give years of trouble-free and accurate time service: movements which are built according to the best traditions associated with British manufactures.

Mr. P. J. Chaffin, F.C.A., Secretary of The British Clock Manufacturers' Association, of 8, Staple Inn, London, W.C.1, is ready at all times to assist buyers in obtaining any information they require or in getting into touch with manufacturers of all classes of clocks.

CATALOGUE LIBRARY.

The undermentioned catalogues relating to United Kingdom manufacturers have recently been received and may be consulted by *bond fide* firms or individuals at the Office of His Majesty's Senior Trade Commissioner in India, Fairlie House, Fairlie Place, Calcutta:—

<i>Names and Addresses.</i>	<i>Description.</i>
Follsain Syndicate, Ltd., Halifax House, 62-64, Moorgate, London, E.C. 2.	Patented Road Studs for reflecting light on the highways at night.
Imperial Chemical Industries, Ltd., Imperial Chemical House, London, S.W. 1.	"Drikold" & "Penguin" Refrigerated Equipment.
J. A. Crabtree & Co., Ltd., Lincoln Works, Walsall.	Electric Accessories and Control Gear.
John & Joseph Taunton, Ltd., Belgrave Works, Sherbourne Road, Birmingham 12.	"Taunton's" Hospital Equipment, Ideal School Bedsteads, etc.
The British Thomson-Houston Co., Ltd., Rugby, England.	D. C. Mill Motors, Power Transformers, etc.
B. S. A. Cars, Ltd., Coventry.	Motor Cars.
The Daimler Co., Ltd., Coventry.	Motor Cars.
The Lanchester Motor Co., Ltd., Coventry.	Motor Cars.
The Exors. of James Mills, Ltd., Bredbury, Near Stockport.	Keys, Cotters, Taper Pins, etc.
Guest Keen & Nettlefolds, Ltd., 66, Cannon Street, London, E.C. 4.	Two-way Keys, Lug Liners, Reversible Distance Pieces, etc.

<i>Names and Addresses.</i>	<i>Description.</i>
The British Tap & Die Co., Ltd., Triangle Works, Town Road, Edmonton, N. 9.	Taps, Dies and Screwing Tools.
- George MacLellan & Co., Ltd., Rainwear Works, Glasgow, N.W.	Altex Poroproof Sportswear, Raincoats, Brookland's Tyres, Tennis Balls, etc.

Catalogues marked with an asterisk have also been received in the Office of His Majesty's Trade Commissioner, 3, Wittet Road, Ballard Estate, Bombay, where they may also be consulted by *bona fide* firms or individuals.

TRADE ENQUIRIES.

The names of the United Kingdom firms referred to in the enquiries mentioned below will be furnished to reputable firms on application to His Majesty's Senior Trade Commissioner, Post Box No. 683, Fairlie House, Fairlie Place, Calcutta.

No. 840-34.

A United Kingdom firm who manufacture bakelite moulded products are desirous of appointing an agent in India.

No. 970-34.

A United Kingdom firm are desirous of appointing agents in India for their rubber productions amongst which they manufacture the following:—

(1) All classes of moulded and sheet rubber mechanical requirements.

(2) Hose pipes and tubing of every description.

(3) Driving belting and conveyor belting of every description.

(4) Asbestos manufactures of all descriptions, including brake lining for automobiles, etc., engine and pump packings in Asbestos, Cotton, Flax, Hemp, Rubber, etc., for Diesel and Steam Engines—high and low pressure packings, and Pump Packings.

(5) Tennis and other Games Balls, all equipment for Tennis, Golf, Badminton, Football, Hockey, etc. Their Sports manufactures can be branded with customers own name or brands if required.

(6) Cycle tyres and accessories.

(7) Waterproof garments of every description; Mackintosh, Showerproof and Leather Coats. Fishing clothing and equipment.

(8) Piecegoods for garment makers, motor hood coverers, cart and wagon cover makers, and hospital purposes.

(9) All types of Rubber Air goods, including patent belts, cushions, beds and hot water bottles.

No. 983-34.

A United Kingdom firm who manufacture a "Publicity Fountain Brush-Pen" are desirous of appointing agents in this market.

H. M. TRADE COMMISSIONERS IN INDIA.

Calcutta—

Sir Thomas M. Ainscough, C.B.E.,
*His Majesty's Senior Trade Commissioner in
India and Ceylon.*

Mr. R. B. Willmot,
His Majesty's Trade Commissioner at Calcutta.
Post Box No. 683, Fairlie House, Fairlie Place.
Telegraphic Address.—"Tradcom, Calcutta."
Telephone No.—"Calcutta 1042."

Bombay—

Mr. W. D. M. Clarke,
His Majesty's Trade Commissioner at Bombay.
Post Box No. 815, 3, Wittet Road, Ballard
Estate.
Telegraphic Address.—"Tradcom, Bombay."
Telephone No.—"Bombay 23095."

Ceylon—

Imperial Trade Correspondent,
The Principal Collector of Customs, Colombo.

